THE VETERINARY JOURNAL

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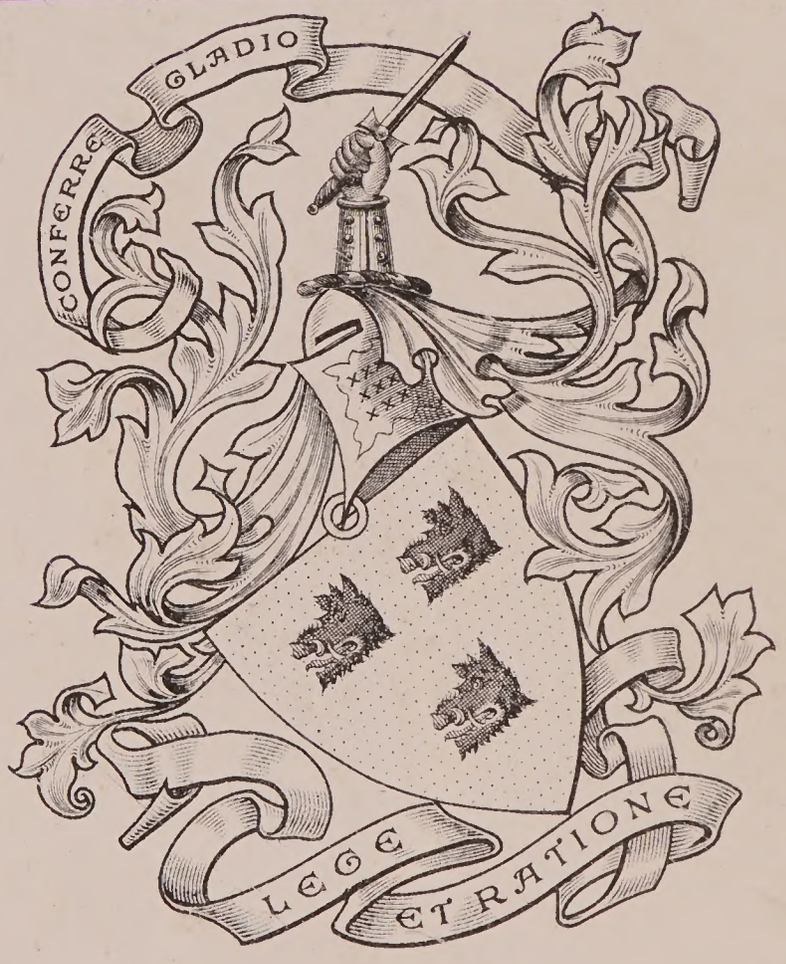
1925



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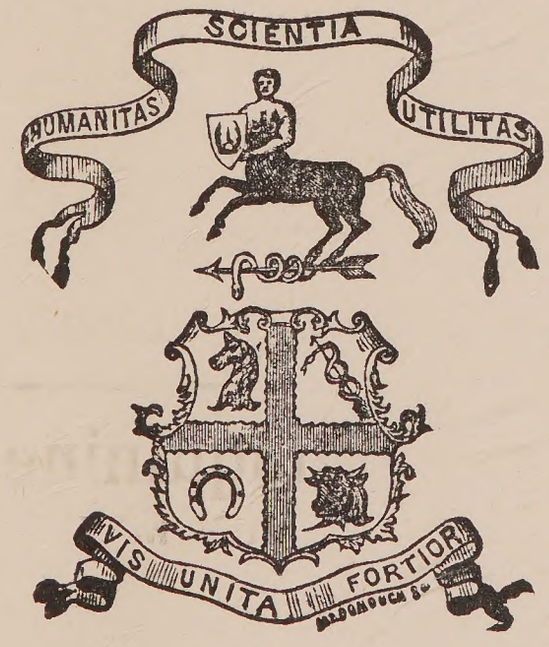
THE

VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

VOLUME XLII., 1896.



London:

BAILLIERE, TINDALL & COX, King William Street, Strand.

PARIS: BAILLIERE. MADRID: BAILLY-BAILLIERE.

NEW YORK: W. R. JENKINS. CALCUTTA: SABISTON & MURRAY.

MELBOURNE, SYDNEY, & ADELAIDE: GEO. ROBERTSON.

Printed by Hazell, Watson and Viney, Ld., London and Aylesbury.

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JANUARY, 1896.

"MADE IN GERMANY."

BY "AZYGOS."

THIS is not, as its title might lead one to think, an article on children's toys, Lager beer, or even military organisation, but to the vast majority of the German population a far more important factor in promoting the advancement, physical and otherwise, of the inhabitants of the Fatherland, viz., the methods by which the homely pig is converted into nourishment for the sustenance of the German race.

The pig-killing or "Schlachterfest" (literally "slaughter-feast"), is looked upon by all country people as a far more exciting and important function than birth, death, marriage, or indeed any other domestic occurrence or ceremony, and it is an event to be looked forward to for weeks beforehand, and talked of for weeks after by certainly all the peasant portion of the population, and even in the better-to-do classes the "Schlachterfest" is by no means thought lightly of. The sausage is to the German what beef is to John Bull, and it is indeed about the only kind of meat ever tasted by the poorer classes in the country, and its varieties are fearful and wonderful to the outsider and uninitiated; *absolutely nothing* remaining of poor piggy on the evening of his decease but the eyes, gall-bladder and tail, and where twelve hours previously he had revelled in all the pride of fattened pighood, there are now to be seen only the above-mentioned sad relics, whilst in the Hausfrau's store-room are hanging rows upon rows of sausages, black and brown, and pink and white, and raw and cooked, encased in various parts of his internal economy, whilst legs and sides and hams are reposing in a barrel embalmed in salt and spices preparatory to becoming bacon and ham and pickled pork; the superfluous adipose tissue

being melted down into jars and pots for cooking and eating purposes; in fact it is used simply spread upon bread instead of butter.

The most usual breed of pig to be met with in Germany is a cross between our Berkshire or Yorkshire and the native long-nosed, long-legged, and unfastidious animal with hanging ears and long straight tail. On the large farms, however, pure-bred English pigs are now generally to be found, but the peasant prefers the above-named cross on account of their hardiness and readiness not only to eat a diet composed of everything and anything, but to fatten on it; the breed is known as the bastard pig.

One feature in the life of the peasant's pig is worthy of note, viz., the fact that all the summer and autumn he is regularly taken out and herded by an individual chosen for the purpose. The swine-herd is subscribed for by all the pig-proprietors of the village, and he is, as a rule, even poorer than his neighbours, or else his trade is one that can still be pursued whilst herding his noisy and unruly charges, and the writer has seen the village tailor sitting in the midst of a herd of 50 or 60 pigs busily manufacturing or patching nether garments for his patrons! His daily routine is as follows:—At about mid-day he sets out to a well-known rendezvous in the village, accompanied by a couple of dogs and blowing lustily on an ancient and unmelodious horn, at whose well-known sounds every pig in the place trots forth from his own especial dung-heap to the place of meeting. As soon as they are all assembled the procession sets out with its varying accompaniment of pigs squealing and grunting, dogs barking and yapping, whip cracking, horn blowing, and excited peasant women running and shouting in the rear to bring up unruly stragglers who have not yet learnt to obey the sound of the "Assemble" call. They are taken to waste grass places, or in autumn to the stubble fields, where they grunt and grub to their hearts' content, unhindered by a ring in the nose (in fact, the writer has never seen a ringed pig in Germany), but, of course, being prevented from grazing on the crops which are unprotected by a fence or hedge of any sort; consequently, the swine-herd must keep a sharp look-out to restrict his charges to the waste places, where they can do no harm. Without his dogs, indeed, this would be a hopeless task, but between his own leathern-thonged whip and his dogs' teeth, discipline is maintained. At dusk he returns to the village, and walks down the main street with an ever-decreasing herd, as each pig turns off of his own

accord to his own home, until they have all disappeared, when his labours as swine-herd cease for the day. But to return to the subject of our article. In the grey of the early morning in winter—for it is early at this time of year that the pig-killing takes place, in order that the meat may keep—the poor victim is brought forth and stuck, the blood being caught in a large vessel, and quickly subjected to a medium temperature so that it shall not freeze, and the usual process of removing the bristles is gone through; then the internal organs are taken out and all carefully preserved with the above-mentioned exception of the gall-bladder. Small portions of flesh are cut from the muscles of the diaphragm, larynx, intercostal muscles, root of tongue, and the muscles of the eyeball, for examination by an appointed official inspector, to test the existence of trichina spiralis. The rules regarding this are very stringent, and the slightest deviation from the law is punished severely, the danger of death from trichinosis being, in Germany, far greater than it is with us on account of the large quantity of flesh which is consumed absolutely raw, and the still larger quantity which is only smoked, and, but for this mode of preservation, is eaten uncooked.

The "official inspector" is, as a rule, any peasant who is sufficiently ambitious or intelligent to go through the necessary instruction and examination, to obtain his diploma as inspector of trichinæ for the village; but any qualified veterinary surgeon, doctor, or chemist, is also competent to undertake the task. A charge of one mark or shilling is made by the inspector to the owner of each pig that he examines, and in addition to this a sum of about 30 marks as "prize-money" from the State should he discover the presence of T. spiralis, in which case specimens are also taken from the small intestines and sent with the rest of the sections to the State District Physician for the latter to re-examine it in order to ascertain if trichinæ really are present.

The suspected carcass must be either buried with quick-lime, or it may be used for purposes other than those of consumption. An exact translation of the law respecting the examination of pig's flesh for T. Spinalis is to be found below.

But *revenons à nos moutons* or rather *cochons* in this case.

By this time the inspector will have appeared on the scene with his microscope under his arm, dressed in his best clothes with face washed and hair well greased, and, duly filled with the sense of his own importance he sets to work, and when

the inspection is at an end, he returns to his own home and proceeds with his shoe-making, carpentering, ploughing, or whatever the occupation may be in which he has been temporarily interrupted.

The exact method of procedure will be hereafter given in the rules relating to this matter.

The "butcher," it may be observed, is not, as a rule, solely a butcher by profession; his trade, generally, is such that he would be out of employment in the winter were it not that he was able to turn his hand to pig killing; hence it is that these amateur butchers are as often as not builders or stonemasons. The butcher is at the head of the proceedings as soon as the inspector has finished his part of the business, and the farmer is therein "assisted" by every occupant of the house, from the aged grandparent down to the last born, for the "Schlachterfest" is not to be missed on any account, and as well as the rightful occupants of the house, all the relations, friends and neighbours are invited to assist, until the already heated room is rendered almost unbearable with a variegated odour of humanity (unwashed) and pork.

The scene is difficult to describe—still more difficult to imagine—unless one has been present at one of these orgies. In the middle of the room is to be seen a huge, round block of wood, more or less battered out in the middle—generally the trunk of a beech tree; surrounding it are four sturdy youths, or maidens, each armed with a curious instrument, more like a turnip-hoe than anything else, except that the "hoe" part is in the same line as, instead of being at right angles to, the handle. These implements, keenly sharpened, are used to chop up the meat into indescribably fine pieces for sausages, and the butcher from time to time throws on to this block, fresh "material" in the shape of pieces of flesh or fat, or a few pinches of salt, pepper, marjoram, cinnamon, allspice, or saltpetre, tasting every now and then with the air of a connoisseur, the raw mixture, in order to ascertain if it is as it should be.

The clamour caused by these choppers, which are pounded up and down by the hour together, as hard as lusty and willing arms can pound them, and the incessant chatter and laughter of all the brothers, sisters, cousins, aunts, and uncles, creates a din once heard never forgotten. In addition to the above described quartette, are many other busy merry groups of workers, some superintending the boiling of those kinds of sausages that are cooked, some helping to mash and prepare the gut, some filling the sausages, some carrying

off hams, sides, and bones to be salted and pickled, some tying the sausages and pricking them all over with a fork to allow the steam generated in boiling to escape—in short, each one occupied in getting up an appetite with which to reduce the number of sausages before they ever arrive in the store room or cupboard of the good wife of the house. In different parts of Germany different kinds of sausage are fashionable, so that one has not nearly enumerated all the different kinds that are made by describing the following varieties :—

(1) "Mettwurst," or "chop sausage," made of the best parts of the raw meat and a little fat, spices, etc., very finely chopped and encased in the large intestines, and wood-smoked for about three weeks in a specially prepared chamber through which a chimney passes. Eaten raw.

(2) "Bratwurst," or "frying sausage," which is the same as No. 1, only put into the small intestines, not smoked, but fried before eating.

(3) "Rotwurst," or "blood sausage," made with the boiled fat, heart, lungs, kidneys, tongue, etc., a little raw flesh and the blood, and a great deal of spice. This is put into the stomach, bladder, and large intestines, then boiled again for about half-an-hour and eaten cold, cut into thin slices.

(4) "Sülzerwurst," or "jelly sausage," rather similar to No. 3, but without blood. This tastes rather like brawn.

(5.) "Weekerwurst," or "whitebread sausage," made with the boiled skin, brain, and odds and ends of boiled or raw flesh, quantities of onions, and white bread soaked in water and pressed dry; boiled an hour, and before eating it is fried.

(6.) "Leberwurst," or "liver-sausage," made with the boiled liver or fat, chopped *very* fine, and spices added to taste. Boiled a quarter of an hour and eaten cold. This is considered a great delicacy, and tastes rather like *pâte de foies gras.*

There are innumerable varieties to be got out of the above, but the various kinds described are really the groundwork upon which the others are based, the difference being more in the name than anything else; but, as before stated, each province has its own special system of nomenclature, though the actual difference is very slight.

The Schlachterfest usually occupies the whole of the day, and the participators in its revels, having amply "sampled" specimens of their own and their neighbours' handiwork, return to their homes planning their own coming "Schlach-

terfest," or comparing notes, should that important festival have already taken place.

It may be mentioned that now nearly every peasant takes the precaution of insuring his pig, so that in the event of *T. Spiralis* being found to be present, he receives about two-thirds of the animal's entire value.

Annexed are the laws relating to the Compulsory Inspection of Swine's Flesh, translated from the German.

POLICE ORDERS, 1874.

(1) Any person killing a pig, or causing one to be killed, is compelled to have the same microscopically examined by a certificated inspector, before it is cut up. The meat shall not be cut up for sale, prepared for food, or sold, until it has been certified to be free of trichinæ.

(2) The same examination must take place on the uncertificated carcass of any pig slaughtered outside the district.

(3) Any professional swine slaughterer, pork butcher or any dealer in any form of pig's flesh, must have in his possession a "Slaughter Book" and "Meat Book," in which must be entered by the inspector the date and result of official examination. The same book must be kept for at least two years succeeding the date of last entry, and must be produced on demand of the local police, or on demand of the purchaser of the meat. Private individuals must have a certificate from the inspector, and keep the same for a period of not less than three months, and produce the same when demanded by the police.

(4) If after examination (see pars 1 and 2), the meat be found to be beyond doubt trichinosed, the inspector, as well as the owner, shall at once report it to the local authorities, and forfeit all further rights of disposal over the same.

(5) The local authorities must make it their business to see that all the meat be rendered unfit for human consumption, by the use of a sufficient quantity of strong acids, leaving it only in such condition, that its use for technical purposes be not destroyed.

(6) For the prosecution of the microscopical examination of the pig's flesh for T. Spiralis, as well as the booking and certifying of the same, the hereafter given method of carrying the law into execution is imperative.

(7) Any person failing to act in accordance with pars. 1—3 is subject to a fine not exceeding 30 marks in every instance, unless he shall have come under the power of penal law, and thereby rendered himself liable to a lighter penalty.

(8) These rules come into force as soon as the inspector is appointed, and his name and address are registered at the Local Police Station.

(9) Also, shall the cutting up offering for sale, selling or otherwise disposing of meat, sausage, or other preparations infected with "Tænia Solium," be declared to be injurious to health, and the purveyor fined, according to par. 7.

(10) Thn inspector is also bound to examine the meat as carefully for "Tænia Solium" as for Trichina Spiralis, and to give a certificate to the effect that the meat is free from them, otherwise he must report their presence to the local authorities. No further charge is to be made for examination for T. Solium.

(11) The meat infected with T. Solium is to be destroyed or rendered not injurious according to the method prescribed in par. 18 (see below).

Methods of carrying above laws into effect.

(1) All doctors of medicine, qualified apothecaries, the veterinary inspector of the district, or the local veterinary surgeons, have the right to microscopically examine the meat. Before doing so, they must register themselves at the local magistrate, and there swear on their oath to fulfil the law in this respect.

(2) All other persons who wish for the appointment of meat inspector, besides furnishing a proof of their reliability, must pass an examination before the District Physician appointed by the State, and must receive a certificate attesting their efficiency in this respect. The fee for the above examination shall be 3 marks; the stamp for the same to cost 1 M. 50 pf. (1s. 6d.)

(3) On receiving the certificate of efficiency, the holder is entitled to permission granted without further cost, by the local authorities, enabling him to conduct examination for T. Spiralis. The inspectors that shall be appointed must be sworn in by the local authorities, and their names and addresses shall be publicly announced.

(4) The number of meat inspectors in a district shall be decided by the local magistrate.

(5) If insufficiency or carelessness in examining the meat be proved against the inspector, his appointment as inspector shall be withdrawn and transferred to another, the withdrawal and transfer being made public.

(6) The State District Physicians are entitled to give theoretical and practical instruction in the examination for trichinæ, for a fee of 6 marks.

(7) The choice of a suitable microscope for the purpose of examination, is to be left to the candidate. The same must be tested by the State physician of the district, and a written formula given by him, declaring it to be suitable for the purpose required. The same must have a power of not less than 100 diameters, and be of such quality as to enable the object to be seen clearly and sharply.

(8) The fee for each microscopical examination for the entire carcass of slaughtered pigs, and for any portion of meat brought on to the premises shall be one mark, to be paid by the owner of the entire carcass, or part of the slaughtered pig. Should the inspector be obliged to leave his village for purposes of examination, the value of the time thereby lost, shall be refunded to him by the employer.

(9) In order that the inspection shall cause as little delay as possible to the inspector, the proprietor of the pig or of the meat shall on the day preceding that on which the pig is to be slaughtered, give due notice to that effect, and the inspector shall then be bound to conduct the examination before noon on the day following that on which he shall have received the notice. Should he receive the notice before noon, he shall then be obliged to undertake the examination on the afternoon of the same day.

(10) For the examination of newly-slaughtered pigs, portions from the following parts shall be taken : the muscles of the diaphragm, abdomen, larynx, intercostal muscles, the roots of the tongue, and the muscles of the eyeball. The inspector must either cut out the above portions himself, or else cause it to be done in his presence.

(10a) No inspector shall undertake the microscopical examination of more than six pigs in the same day. Should he do so, he incurs the punishment referred to in par. 5.

11) The following are the rubrics for the Swine Slaughter Book (see par. 3 of the Police Orders):—

No. of Book.	Date of Slaughter.	Age, sex, race, and marks of Identification.	Name and Address of former Owner.	Date of Microscopical Examination.	Certificate from Inspector and result of the Inspection.	Remarks

Rubrics 1—4 shall be filled in by the purveyor.
Nos. 5—6 to be filled in by the inspector.

(12) For professional purveyors of imported meat, the Meat Book is to contain the followiug rubrics.

No. of Book.	Date of Arrival of Goods.	Description of Goods.	Weight of Goods.	Name and Address of the Supplier of the Goods.	Place and Date of the Microscopical Examination.	Result of Examination.	Remark

The invoice from the supplier must be numbered to correspond with the entry in the book.

(13) Such meat shall not be offered for sale or sold until it has been proved to have been examined and found free of T. Spiralis.

(14) The proof shall consist either in producing a copy of the examination signed by the inspector, and witnessed by the authorities of the district from which the meat has been brought, or else the meat shall be examined on the premises of the dealers and there certified to be free of trichinæ.

(15) The inspector shall also possess an Examination Book with the following rubics in which details and result of every examination must be entered.

Current No.	Proprietor of the Pig or the Meat.	Nos. of the Slaughter and Meat Book belonging to the Dealer.	Subject to be Inspected.	Date of Microscopical Examination.	Result of Examination.	Remarks

(16) Should the inspector find the meat examined to be free of T. Spiralis, he shall state the same in the book of the purveyor, or in the case of private individuals, he shall give them a certificate to above effect.

(17) Should he detect the presence of T. Spiralis, he shall at once communicate the fact in writing to the local authorities, and shall also intimate the same to the owner.

The specimens shall be at once sent to the State district physician for him to re-examine.

In the event of trichinæ existing in a newly-killed pig, portions of the intestines shall also be examined for intestinal T. Spiralis.

(18) The police must take precautions that the trichinosed meat shall not be used for consumption by either man or beast, but the following is permissible:

(*a*) Skinning and removing of the bristles and using the same.
(*b*) Melting the fat and using the same in any way whatever.
(*c*) The using of parts suitable for either soap or glue.
(*d*) Chemical preparations of the whole of the body in chemical works.

Should the uses mentioned in (*c*) and (*d*) be impracticable, the whole of the parts therein mentioned are to be destroyed, either by fire, or by burying, covering with lime or chloride of lime solution.

(19) Should the inspector find trichinæ to exist, he is bound to report the same to the local authorities, and the latter must see that the meat is destroyed according to the method prescribed in par. 18.

ESSAY ON "THE DIAGNOSIS OF LAMENESS IN THE HORSE."

BY "BADMINTON."

I PROPOSE to consider a mode of examination of an obscure case of lameness. The same method will apply as a part of the examination of horses as to soundness.

Lameness is manifested:—

1*st.* When the animal is at rest;
2*nd.* When the animal is in motion.

1*st. When the animal is at rest.*—This part of the examination is conducted both in and out of the stable, but it is always preferable to see the animal first *in* the stable as we may there notice valuable symptoms which are not manifested, or that escape our notice, after the animal has been led out. A limb may be suspended; alterations of structure may be noticed; but if the animal is standing on all four feet, first notice the fetlocks and pasterns. In the endeavour to ease the affected limb by putting on less weight the pastern is rendered more upright, and that of the sound limb more oblique.

Pointing.—This may be from fatigue or lameness, or from a habit contracted from a previous lameness. If from fatigne, usually a fore-foot and a hind are pointed simultaneously, but of different sides; *e.g.*, the near fore and the off-hind.

In pointing from disease, one foot is pointed at a time; and when one limb or foot is diseased, that foot only; when both fore-feet, each foot alternately.

As a great rule, however, pointing is premonitory of navicular disease, though it is seen in "sprain of the back tendons," splint, etc., and even in corn. It is not a constant

symptom in navicular disease, in which it may be seen months before lameness occurs, or may be absent for some weeks, or even a month or two after lameness.

When the lameness is in *one* hind-limb, various positions are affected. If the animal stands with the lame limb in advance of the sound one, the position generally indicates disease in or below the hock. In a severe case of open hock-joint, the foot was drawn up to the abdomen. The converse condition is seen in rupture of the flexor metatarsi muscle.

Luxation of the stifle-joint will also be indicated by the excessive extension of the hind-leg backwards with inability to flex the leg.

When *two* legs, either fore or hind, are simultaneously affected, relief will be sought by resting the foot or leg of each side alternately, giving the longer relief to the lamer limb, if there is a difference, and by endeavouring so to change the centre of gravity as to cause the greater weight of the body to bear upon the sound extremities.

"A horse with acute pain in the fore-feet," says Principal Williams, "will stand with his hind-limbs advanced beneath the body, resting first one fore-foot and then the other, and every time he moves will rear up his head and stretch out his neck in expression of the pain he suffers ; but should the pain be in both hind-feet, he will stand with his fore-feet beneath his chest and towards the central line of gravity ; his body pushed forward, his head hung down, in order to remove the weight as far as possible from the seat of pain. he will first ease one hind-foot and then the other, breathing heavily and showing other signs of acute pain."

The position of the feet when all four are affected with laminitis is the same as when the front feet only are affected.

Having viewed your case as it stands, next send the animal over in the stall and watch the first movement very carefully. If there is lameness in a hind-limb it is premonitory of spavin and oftentimes the only indications of this disease are those seen in the stable. The animal may now be brought out, but before this is done all clothing is to be removed.

The careful practitioner will watch the action of the animal as it is led out of the stable.

2nd. While the Animal is in Motion.—Here two points have been considered :—

(*a*) The designation of the lame limb or limbs.

(*b*) The seat of the lameness.

(*a*) *The Designation of the Lame Limb or Limbs.*—Some practitioners, in examinations as to soundness, examine the

more common seats of lameness *before* trotting, while others prefer to have the animal trotted before examining. Each method has its advantages and disadvantages, and it is much a matter of habit one way or another. Personally, I prefer to see the animal move before examining, and for the reason that the effect of a prior examination is to cause one to look for lameness in a "suspected" seat, and oftentimes to imagine the existence of lameness where it is absent.

All clothing having been removed, have the animal trotted immediately on sets, if possible, at the rate of five or six miles an hour. If the bridle is not a snaffle, a halter is preferable. Instruct the man who leads the horse to hold the rein at about eighteen inches from the mouth. This will prevent "knowing individuals" from holding up the animal's head to prevent "nodding." The trot at above speed is the best for the diagnosis of lameness; any friskiness or high speed makes detection of slight cases a difficulty.

When the animal is going *from* you, the hind limbs and croup are to be noticed; when coming towards you, the fore limbs.

It is, perhaps, needless to say that if one limb only is affected, a horse raises his head and fore part of body or croup *from* the lame side and drops on the sound side, as the lameness is either in the fore or hind limb respectively. The descent of the head also accompanies that of the sound limb.

In observing the hind action, notice whether the hocks are evenly flexed, watch the croup, and listen to the sound of the feet. The quarter of the lame side will be elevated, and that of the sound side thrown forwards and downwards by a jerking motion; the head being moderately steady if the pain be not great, and jerked if there be acute agony.

"When the lameness is in *both* hind limbs," says Principal Williams, "the animal is both stiff and lame, but mere stiffness must be distinguished from lameness, though it is often confounded with it."

A slovenly action must not be mistaken for lameness; in such a gait the animal throws his feet about as if they did not belong to him.

It must also be remembered that when a horse is lame in both fore-feet, he picks up his hind-legs quickly and puts them down quickly, giving an appearance of string-halt.

"*Cross-lameness*" is generally understood to mean an *appearance* of lameness in a sound limb diagonal to a lame one. It is a great bugbear to students, for obvious reasons.

But no mistake need be made if the animal be carefully watched, when, supposing the *true* lameness be in a fore-limb, the irregularity of movement in the quarters is seen to be caused by the elevation and dropping of the head and fore part of body. Also that the "*true*" lameness is the one more pronounced. The comparatively rare lameness in diagonal limbs simultaneously must not be overlooked.

We next notice the animal coming towards us. Lameness in *one* fore-limb is a comparatively easy matter to diagnose. The symptoms have been already described. When occurring in both fore-feet, it should be first mentioned that the animal seems to go sound. But the action is very short, and there is a want of freedom of movement. Each foot is put carefully down and picked up quickly, from the pain caused. There is also more or less rolling of the body. The favourite simile of many "horsey" individuals, when describing this lameness, is that the animal goes "like a cat on hot bricks." Another symptom is that when coming towards you the animal appears lame in one limb, and when moving from you lame in the other. As already mentioned, the hind-limbs are picked up quicker than ordinarily.

"*Bridle Lameness*" is generally seen in horses exercised in a circle. There is a long step and a short one, the latter being in the fore limb nearest the centre of the ring. Send the horse the opposite way round, and the short step is changed to the other limb; so it is seen that the difference in length of steps is simply to enable the animal to go in a circle. If the steps were of the same length, it is evident the horse would go straight.

This peculiarity of action is also seen when the head is pulled to one side, also in young animals when first bitted. If in doubt, get your man to lead from the other side; but some horses will not trot quietly if led from the off-side, when it will be necessary to have a man on each side, and the animal's head to be kept straight.

Some horses, though going sound, or appearing to go sound on the straight, show lameness when turned round; therefore, this part of the examination should never be omitted. The horse should be turned sharply round—that is not *carefully*—towards your man, when the limbs are made a pivot of movement for the body, and every one put to a searching test. Afterwards the animal may be backed, in which movement string-halt and shivering are particularly noticeable. It is sometimes advantageous to cause the patient to travel on an inclined plane, especially when the

lameness is located in the fore legs, by way of exaggerating the pain by the overbalance of the frame, and thus intensifying its manifestation. Examination whilst the animal is being ridden has also been recommended.

(*b*) *The seat of the lameness.* Having found the lame limb, the first thing to do is to have the shoe removed, and it is as well always to superintend this operation. Watch every step of the process, including the examination of each nail as it is drawn, exploration and percussion on the solar surface of foot; exploration with the pincers and percussion of the wall, while the foot is on the ground. Also notice the "wear" of the shoe. The more common seats of lameness are the foot in front and the hock behind, and lameness oftener occurs in the fore than the hind limbs. But a great deal depends on the breed and make of the horse, and the kind of work he does, and whether he does it on hard or soft ground.

The "tread," or in other words, how an animal puts its foot to the ground, is oftentimes very characteristic, whilst at others the gait or mode of projecting the lame limb is an indicative symptom.

How different, for example, is the going of a horse lame from a prick to one lame in the shoulder! In the one case, the limb is advanced freely, and the foot put carefully to the ground, while, in the other case, the limb is dragged rather than lifted. It will be observed whether in going the animal treads more upon the heel or the toe, or whether he goes more upon the inside quarter than the outside.

If the pain is in the posterior part of foot, as in navicular disease, for example, the toe is put down first; and *vice versâ*.

Should the pain be in the inside, he crosses his legs. Some say a short step occurs in lameness *above* the knee, and a long one when lame below.

(The short step by the *sound* limb is to take the weight off the lame one as quickly as possible.) Also that when a horse stands with the lame leg in advance of the sound one, it generally points to disease *below* the knee; but if he places it in a line with the sound limb, it can be relied on as being *above* the knee. In all cases of lameness a horse tries to avoid much use of the part affected on account of the pain consequent on movement.

Says Principal Williams: "In shoulder and knee lameness more particularly, the signs of pain are more discernible during the *elevation* of the foot from the ground; whereas in

foot and other diseases below the knee, the converse is the rule."

With the information then of the duration of the lameness, whether its occurrence was co-incident with any accident such as a blow or a fall; whether it followed a recent shoeing, whether the lameness increased or diminished on exercise, or whatever else an intelligent and interested observer may have noticed; we proceed to examine the limb with the hand. The veterinarian, accustomed to the feel of horses' limbs, will soon detect the presence of heat and swelling, or pain on manipulation, but in the absence of these positive symptoms, we are only left with consequent negative symptoms and peculiarities of gait.

For example, if there be neither heat nor swelling in the limb, nothing in the superficial parts of the foot to account for lameness, we may conclude the trouble to be in the deep structures of the foot or a part thickly clothed with healthy tissues.

Peculiarities of Gait.

Shoulder Lameness.—In this lameness particularly, the gait is characteristic. Pain or inability evidently intimidates or prevents the horse from lifting and projecting the lame fore-limb in the manner and with the freedom he does the sound one. He cannot get it forward in a direct line without pain; to avoid which the limb is thrown outwards and brought forward with a sort of sweep, the toe being dragged—or nearly so—along the ground. Though it may appear strange, no two lamenesses have so frequently been confounded as foot lameness and shoulder lameness; the best explanation of which seemingly unpardonable error in judgment probably is to be found in the fact that there is nothing to be seen in either one or the other to account for lameness. But the manner of carrying the foot is sufficient to obviate any such error. If the foot be lifted high, the shoulder is little, if at all, affected. It is principally in the lifting of the foot that the pain of shoulder lameness is caused. Pain, heat, and swelling will be discovered on manipulation, though the two latter symptoms are not so apparent as might be supposed through the joint being partly covered by the levator humeri muscle. So, in order to discover the swelling, it will be necessary to push this muscle to one side; it being only loosely attached. Next, take hold of the limb and work it backwards and forwards, also drawing it *from* the body, when the animal will evince

pain. In some well-marked cases the extension of the fore-arm by the examiner will cause the animal to rise bodily from the ground. In cases, however, in which only slight pain seems apparent, caution must be observed, as some horses are naturally fidgety and will not stand such handling.

Shoulder lameness is not so common as many people suppose, but if along with the peculiarities of gait there should be pain on manipulation, the case may fairly be considered as one of shoulder lameness.

Elbow Lameness occurs from disease of the joint, sprain of the lateral ligaments, and from laceration of the triceps extensor brachii muscle. The commonest cause being a fall with a load, when this accident is known to have happened —or in case of the attendant denying it, there is cause for suspicion—a useful hint has been obtained as to the seat of the lameness. When the ligaments are sprained or the triceps injured, the diagnosis of the seat of lameness is easy, for there will be swelling, pain, and heat, in addition to difficulty in moving the articulation. When the internal ligament is injured, the horse stands with his foot and limb thrown outwards. This he does to prevent, as much as possible, the injured parts being pressed upon by the pectoral muscles, and when the triceps is the seat of injury, the fore-arm is flexed upon the humerus; the action of the flexor brachii being now unopposed, the knee is elevated, the leg flexed from the knee downwards, the toe of the foot touching the ground, and the limb semipendulous. When the horse is made to move, he drops considerably, and seems in danger of falling every step he takes, the limb itself almost bending double when any weight is thrown upon it. This excessive dropping during progression is characteristic of elbow-joint lameness, even when there are no external signs, such as heat, swelling or pain, visible.

Knee-Joint Lameness.—When we consider that the knee-joint is the analogue of the hock, and as such enjoys a greater freedom of motion than the other joints of the limb, also its anatomical complexity, it is a matter of surprise that disease is rarely found apart from traumatic causes. "The gait is chronic carpitis," says Mr. Cherry, "affecting both knee-joints, gives to the rider the sensation of the chest being displaced from its right position, a sinking or 'foundering,' and which feels as if it would increase at every step of the horse. When attention is drawn to this peculiar gait, it is easy to be distinguished from the short cat-like step in naviculartheritis, which gives to the rider a sensation of the chest being raised

up, or an attempt at doing so; further, the feet in navicular-thritis are brought to the ground with the toe first, and in consequence the step is short and stilty, from the weight being thrown as much as possible on the column of bones, to relieve the affected tendon or surface over which it plays; and from the same cause there is a great inclination to canter, a pace which, when slow, brings into play but slightly the flexor tendons or navicular joint. In carpitis, on the contrary, these symptoms are reversed, from the cause of lameness being seated on or amongst the carpal bones. The effort is not now to throw the weight on to the bony column, but on to the tendons and ligaments, and by this means to avoid concussion; hence the limb is carried forwards as nearly straight as possible; and still further to affect this object, it is thrown with a circumductive motion outwards, and brought to the ground with the heels first, as is shown by the wearing away of the points of the heels of the shoe, This mode of progression produces a long step, and at the same time the fore-quarters are dropped or lowered, which has been, I doubt not, the origin of the term 'chest-founder.' The diagnostic characters of the disease affecting one leg only are the same as exist in both; but from the contrast which is afforded by the sound limb these are much more recognisable than where both are affected; to these, however, one more characteristic must be added, the step of the lame leg being rather longer than that of the sound limb. The characters are very much akin to those considered to belong to shoulder lameness, but from which it may be readily distinguished: first, by the circumductive manner in which the leg is thrown forwards and the straight knee; secondly, by the absence of the dragging or striking of the toe against the ground; thirdly, by the stepping on the heels and the greater firmness on standing; but perhaps one of the best guides in diagnosis is noting whichever joint is attempted to be least brought into use." The inflammation being deep-seated in the bones is not accompanied by much external heat; nor is there much swelling until osseous matter is deposited. The bones situated on the inner side of the joint are the most generally affected. From their being more under the centre of gravity, they receive a larger portion of the weight sustained by the fore extremities than the bones on the outer side of the joint. Therefore the head of the inner metacarpal, trapezoid, and os magnum in the lower, and scaphoid and lunar in the upper row are most frequently diseased. But it is very rare indeed to find the disease extending to the bones of the upper row.

Sprain of the Superior Carpal or Superior Check Ligament, involving principally the knee-joint. It will not be out of place to refer to this lesion under the above heading. Lameness is manifested by difficulty in flexing the knee, with pain, heat, and swelling immediately above and behind the joint. In severe cases, the inflammation extends to the tendons of the flexors perforatus and perforans, causing thickening of them, and thus interfering with their free play in the carpal groove. This condition, along with distension of the bursa —which appears as a tense fluctuating swelling just above and behind knee, and known as "thorough-pin of the knee" —causes excessive lameness, which, in the gait, has some appearance of shoulder lameness.

(*To be continued.*)

MILK SUPPLY OF COPENHAGEN.

DENMARK has long been famed for its dairy produce, although it is only within the last decade that the Government of that country has enforced sanitary regulations, and exercised control over the milk and butter supply, with regard to its production in cleanliness and purity.

Private enterprise, however, in Copenhagen has gone far in advance of the laws enforced by the Government on this important industry, and a short account of the system followed by the Milk Supply Company of that city affords us ample proof of the necessity that exists for the careful precautions put in force by it, and the splendid success, financial and otherwise, that attends their strict observance.

At the present time, it sells the milk of no less than 4,500 cows. In 1878 the Company was formed with a capital of only £600, securing the disinterested co-operation of three public-spirited men—Dr. Panum, the late eminent Professor of Physiology, in Copenhagen University; Kammerherre Bille, who had been Danish Ambassador at Washington, and Dr. Borch, a leading practitioner in Copenhagen.

The concern thus assumed a hygienic and philanthropic, as well as a commercial, character.

Professor Panum at once gave the use of his own laboratory for a daily analysis of the milk as to density and specific gravity, and this daily analysis has been continued to the present time, both at the University and on the Company's own premises. It is not, however, merely in density

or specific gravity that milk may be defective. It may be blameless in these respects, and yet be far from fit for human food, through unsanitary influences; and it is to the admirable arrangements of the Company to prevent such an occurrence that we more particularly beg to draw the attention of our readers:—Every contractor undertaking to supply the Company comes under a moral obligation to carry out the Company's rules for the feeding and treatment of his cattle, and the Company will only deal with those contractors who give complete satisfaction as to the superiority of their herds. The Company pay the highest price obtainable for good milk. They also share with the contractor any loss he may innocently make through disease breaking out among his cows or his workpeople. He has, therefore, a strong interest to pay the strictest regard to the Company's rules. These rules are worth noting as showing with what care it is sought to protect the public from harm and to secure the greatest benefit from the most necessary article of human food. The cows supplying milk to the Company are examined at the various farms by veterinary surgeons at least once a fortnight. The surgeon must make a report on a prescribed form, stating the number of cows inspected, and in what state of cleanliness he has found the byres and animals. He must also report particularly any case of tuberculosis or other disease that may have occurred, the quantity of milk given by such cows, and how it has been used. Besides the surgeon, an inspector makes a regular round of the dairy farms, and reports upon the quality of the hay and straw, whether the animals are fed according to the rules laid down by the Company, whether cleanliness is observed in milking, the stock of ice and its storage, and the state of the cooling apparatus. The Company also sends out a head dairymaid, whose duty it is to see that the milkmaids are clean and tidy at their work, and that proper care is taken in the cooling of new milk. The contractor must implicitly follow the instructions of the surgeon, and he must immediately report the existence of disease found on the surgeon's visits. When any animal is declared to be suffering from tuberculosis, it must at once be separated from the rest of the herd, and disposed of as soon as possible. In suspicious cases the contractor must withhold the milk until the circumstances can be inquired into. In such cases he receives the full price for the milk. In fact, if the contractor is careful to obey the Company's rules, he is not a loser. If he should knowingly send to the Company milk which is

found to be of an inferior quality, the milk is refused without compensation, and the contract is forthwith cancelled. The food of the cows must be such that it shall give no bad taste or taint to the milk. The proportion to which stall food is to be given must be arranged with the Company before the contractor can begin to supply milk. Brewers' grain and similar refuse from distilleries, turnips, turnip leaves, and every kind of fodder which is not fresh and in good condition are absolutely forbidden. Carrots and mangolds (sugar beets) are permitted up to half a bushel per cow, but only when 7 lb. of corn, bran, and cake are given along with them. Cows supplying infant milk never get more than a quarter bushel of carrots per head. Rape seed is the only oilcake permitted to be used. Stall feeding in summer is on no account allowed; the cows must be fed in the open air upon clover and grass. Dry food or cut corn can only be given with the Company's permission. The milk of cows newly calved must be withheld for twelve days. In autumn, before being taken back to stall, the cows must be clipped on the udder, tail, and hind quarters. Strict cleanliness must be observed during milking. Each milkmaid is provided with a dress and headkerchief to be worn whilst milking, and these must be washed two or three times a week. During the darker months each milkmaid carries a good lantern, which is so placed as to cast its light under the cow. Immediately after milking the milk must be cooled down on a specially provided cooling apparatus to 40 deg. F., above which it is not allowed to be sent off from the farm. The milk is delivered to the Company twice daily in vessels provided by the Company. These vessels, though returned clean, must be rinsed out with cold water at the farm, and must be carefully kept in a dry place till next required. On no account may they be used for any other purpose.

With all these precautions before the milk reaches their own premises, the Company are none the less careful in preparing it for delivery to their customers. Their central station is at Frederiksberg, on the eastern outskirts of the city, where about 200 persons are employed. Here the utmost discipline is maintained; promotion is by merit; neglect of rules, even the slightest is checked, and premiums are given to those who strictly obey them. The health of the employees is carefully looked after, and any case of infectious disease in their families or the neighbourhood of their dwellings must be immediately reported, and employees may be suspended from work so long as they are a source of danger.

They have the less reluctance to submit to such regulations that they are paid full wages during necessary suspension. Moreover, the wages are so much above the average, and wilful concealment is so severely punished that the work-people have every inducement to assist the Company by instant notification of infectious disease. All the milk is filtered before being sent out to consumers. Formerly sponge filters were used, but it was found, in spite of the utmost care, impossible to thoroughly cleanse the sponges; some of the fatty matter always remained, even after elaborate rinsing and steaming. Gravel filters, after an invention by Mr. Busck himself, are now used. The milk is poured into a receiving tank at a height of five or six feet from the ground; from this it is carried into a lower tank, which it enters at the bottom, and in which it rises through three layers of gravel. In the first layer the gravel is about half a pea in size, in the second it is smaller, and in the third the particles are like pin heads. On the top of the upper layer are six layers of fine cotton material. On rising through the filter the milk passes into a storage vessel, in which are perforated tubes so constructed that the milk is drawn from every part of the tank, so that the quality is kept equal. The quantity of disgusting pollution that is got rid of by means of these filters must be seen to be believed. Specimens of it are kept in the Company's offices, and one cannot help thinking that we are a long-suffering people, if our milk, which is unfiltered, contains such elements of putrescence. It is needless to say that the gravel used in the filters is thoroughly sterilised each time it is used. It is cleansed by boiling and stirring in hot water and soda till the water comes away quite clean, and then it is steamed at a temperature of about 302° F.

A special feature is made of the supply of infants' milk. It is separately filtered, and at once bottled by machinery into clear quart bottles. The corks are tied down and sealed, so that the purchaser may be sure there has been no tampering with them. The bottles are kept in ice till ready for delivery. Apothecaries are allowed to sell the bottles on Sundays when other shops are closed. Cows supplying milk intended for infants must not have any oil-cake, and only half the quantity of carrots which the other cows may have.

A more perfect system to ensure the cleanliness and purity of milk and butter could hardly be devised.

The Company has unquestionably done noble and benevolent work in the large provision it has made for sound and cheap milk among the poorer classes, and particularly in

bringing within reach of the very poorest a supply of specially-prepared milk for infants.

We fervently hope the time is not far distant when we will not require to go so far afield as Denmark for an example of dairy management unequalled in this country, and worthy of the highest praise.

ANCHYLOSIS OF THE JAWS IN A DOG.

JOSHUA A. NUNN, F.R.C.V.S., C.I.E., D.S.O., VETERINARY CAPTAIN, A.V.D., PRINCIPAL LAHORE VETERINARY COLLEGE.

THE patient, a large bull-dog, about eight months old, was brought to the hospital of the Lahore Veterinary College, on October 28th, his owner, "a lady," saying that he had never been able to open his mouth properly, and had a difficulty in feeding, also that he was unable to defend himself against the attacks of other dogs, who seemed to be aware that he was helpless, and bullied him. The patient was able to drink, and could open the jaws sufficiently wide to allow of a space of about $\frac{1}{8}$ in. between the crowns of the incisor teeth, but no more; in fact, when it was attempted to force the jaws further open, they were found to be forcibly locked. On October 30th, an anæsthetic, chloroform one part, ether two parts, was administered, and by means of two small straps passed round the upper and lower jaws behind the canine teeth to give a purchase, the mouth was forcibly opened with a loud snap, like the crack of a hunting whip. The dog was kept in the hospital, and the after treatment consisted of massage to the joints, the mouth being opened three or four times a day by grasping the lower jaw between the finger and thumb, and pushing the cheeks in between the molars in the same way that a dog is made to open his mouth to take a pill. He was also given large bones with little on them to gnaw at so as to make him move the jaws. The dog was discharged on November 12th, and though he showed unwillingness to open his mouth to the full extent himself, still he could be made to do so. He was able to feed properly and defend himself when attacked. The case appears to be somewhat an unusual one, and though I have seen anchylosis of the jaw in human beings, I have never yet come across one in veterinary practice. The idea of the operation I took from the gag used by Mr. Christopher Heath in such cases in man.

SOUTH AFRICAN HORSE SICKNESS.
(*ŒDEMA MYCOSIS.*)

BY M. H. HAYES, F.R.C.V.S.

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ABOUT three years ago, on my return from South Africa, where I had seen many cases of this disease, I wrote on it an article which appeared in the VETERINARY JOURNAL. As, since then, Dr. Edington has thrown much new light on this most interesting subject, I have, with the kind permission of our editor, re-written the article as follows. This disease has been known in South Africa since the year 1780.

Definition.—It is a specific fever which is characterised by intense congestion of the blood-vessels, which pour out a large quantity of serum into the neighbouring tissues. The question as to the disease being peculiar to the horse has not yet been settled. Up to the present, it appears to have been always fatal.

Geographical distribution.—It appears to be confined to Africa, and is prevalent throughout the whole of the southern portion of that continent.

Epidemic character.—"This peculiar disease seems, from information at my disposal, to be present in some parts of the Colony every year, and only assumes an epidemic form at wide intervals. Thus the epizootic character has been assumed in the years 1780-81, 1819, 1839, 1854 (Cape Colony), 1888 (Natal), 1891-2 (Cape Colony), and 1893-4 in the Free State."—(*Edington.*)

Varieties.—It is generally considered that there are three varieties, namely (1) the lung form (*Dutch: paard ziekte*), which is the most common kind, and which we might term "specific equine pleuro-pneumonia"; (2) thick head (*Dutch: dikkop*); and blue tongue. The manner in which the œdema is localised, constitutes the only difference between these three forms. Wiltshire, Colonial Veterinary Surgeon of Natal, recognises two other varieties, viz., the enteric form, and one of which ordinary fever is the most marked symptom. His observations on the last-mentioned two kinds may be seen further on.

The microbe or virus of horse sickness.—Dr. Edington, Colonial Bacteriologist from the Cape Colony, states that he has found in the blood of affected horses a microbe (a fungus or mould) which he believes to be the cause of the disease; but he has not succeeded in cultivating it apart from the animal body, and then reproducing the disease.

Immunity.—Horses are particularly subject to this disease. Mules are less liable to it than are horses, and zebras rarely get it.

Method of invasion.—The contagion does not appear to be carried by the air, as is the case of that of malarial fever of man, but seems to be brought into the system along with the fodder, and possibly in the drinking water, and is then taken up by the blood. It is, in fact, fixed, and not volatile. "I don't think it is a malarious disease, for horses kept stabled near swamps and in well-known infected places, do not die of horse sickness if fed entirely on *dry food*, and are not allowed to eat grass during the sickly season. Again, there have been instances of great mortality from it in one district, while an adjoining one, separated only by a narrow river, has been almost entirely exempt." (*Wiltshire.*) Edington explains that the fungus which produces horse sickness remains in the passive condition of spores under the influence of dry air, and is killed by prolonged drought, frost, and cold rains. The dew, which forms abundantly during the nights of a South African summer, is particularly favourable to the growth of this fungus. Hence the reasonableness of preventing horses during sickly seasons, from eating dew-laden forage.

Influence of locality.—Dry, high pastures at an altitude, say of 6,000 feet above the level of the sea, are, as a rule, free from the disease, unless they have been contaminated by the introduction of affected stock; the original home of this microbe appearing to be moist and low-lying lands. "Of late years, however, the high lands of Natal and the Orange Free State have suffered most, even in places where the disease had previously been unknown. On enquiry, I have found that, formerly, infected animals, on the sickness breaking out among them, had been sent to these places, which then became affected." (*Wiltshire*). I cannot say how long the microbes would continue to exist in a dry and cold locality, in which they would be more or less exotics. As a factor in the existence and development of the microbe, the amount of altitude above the sea seems to owe its effect to increased cold and dryness.

It is evident from the foregoing considerations that the microbe of horse sickness, if it exists, can, like that of anthrax, live and retain its virulence outside of the animal body.

Influence of season of the year.—In the Cape Colony, Orange Free State, and Transvaal, the disease rarely occurs before February; although in 1892 it broke out in the eastern

province of the Cape Colony early in January. It is usually worst in April, and, as a rule, disappears with the first frost in May. "In Natal it generally begins on the sea coast a little before Christmas; at Maritzburg, about February; and up country somewhat later. March and April are the worst months.

"Occasional cases are met with even in the winter on the coast. One undoubted instance occurred near Ladysmith during the Boer War in 1881, in July or August, when the ground was covered with snow.

"As summer is the rainy season in Natal, a hot, moist climate is supposed there to be most favourable for an outbreak of the disease, which, in this respect, does not follow any definite rule. In fact, some wet seasons have been very healthy, and some dry ones particularly deadly.

"There is no doubt whatever that the advent of frost almost invariably stops the sickness at once, and generally causes it to show in, and kill, any horses in which it may then be latent." (*Wiltshire.*)

I may mention the interesting fact that yellow fever in man, like horse sickness in horses, disappears on the approach of frost.

Yearly sequence.—Outbreaks of horse sickness do not follow any regular sequence as to time. In some places, like Pretoria, it occurs almost every year; in others, at irregular intervals.

Mortality.—During a year in which the disease is rife, the loss of horses in South Africa is very great. In the two years of 1854-55, 64,850 horses died of it; and in 1892, 13,979 horses and 149 mules. The lung form is extremely, if not invariably fatal. The other varieties are not so dangerous to life; although in them the rate of mortality is very high. Many persons who have had an extended experience of horse sickness, tell me that they have never known a case of the lung form to recover.

Contagiousness.—This disease can be conveyed by inoculation with the blood or with the yellow fluid which is given off from the nostrils, and by drenching with the diseased blood. The yellow fluid is not always virluent. "It is probable that the infection is derived, not from horse to horse as a general rule, but from certain conditions associated with soil and vegetation" (*Edington*).

Period of incubation.—According to Edington, the period of incubation varies from seven to nine days.

Predisposing causes and preventive measures.—Any debili-

tating influence, such as exposure, want of proper food, and fatigue, predisposes an animal to contract horse sickness by lessening the ability of the vital powers to resist an attack. I have been informed by proprietors and managers of various South African mail coach lines, that their horses, which are well fed, though indifferently stabled, enjoy a marked immunity from this disease, even when animals at grass in the vicinity are dying from it in great numbers. The former have to do their work at all hours, late and early. The latter, as a rule, are more or less starved. Cases of horse sickness are all but unknown in South African racing stables, the horses of which, I may mention, seldom, if ever, get any green grass when in training. They generally go out, however, in the early morning, while the dew is on the grass. Mr. Oliver Davis, of Harrismith, who is a well-known owner of horses and gentleman rider, tells me that when he was in the Natal Mounted Police, he managed, during several deadly seasons, to keep his troopers free from the sickness by fumigating the stables after sunrise and a little before sunset. His procedure was, after taking the horses out of the building, to burn a small heap (placed in an empty kerosine tin for safety sake) of dried horse dung and soiled litter, and then to shut up the doors and windows for about a quarter of an hour, until the place was thoroughly filled with smoke. The stable was then opened and the horses allowed in. Mr. Davis says that this is an old Dutch means of prevention. I may mention that he took no other precautions, such as restricting the animals to dry food. The experience of a large number of South African farmers is greatly in favour of keeping horses in a stable, or even in an enclosure, if it be intended to turn them out to graze, until the sun has dissipated the dew off the grass, say, until eight o'clock in the morning. This theory, which has the support of Edington's microscopical investigations, shows that the contagion of horse sickness requires the presence of moisture to develop its virulent properties. Damp weather seems to favour its spread. I may explain that South African farmers have few facilities for putting horses up at night in covered buildings. When they desire to keep their animals collected together, they usually put them in a *kraal*, which is simply a walled-in enclosure, the ground of which, from being constantly trodden upon, very rarely has any grass on it. I have been told by many of these farmers that the plan of keeping horses in a *kraal* at night acts quite as well in preventing the sickness as that of stabling

them. It is evident that when the disease appears in a district, special attention should be paid to stable management, or, if the horses be at grass, that they should be sent away to some high grazing ground above the zone of the disease, a plan which is adopted, generally, by owners of large droves of horses, who have, like, for instance, those at Grahamstown and Harrismith, facilities for doing so. In the case of stabled horses, they should be fed on dry food, such as "forage" (as unthrashed oats are termed in South Africa) and "mealies" (Indian corn) or oats, and should on no account be allowed any grass. In support of this advice I may mention that I have heard, from reliable authorities, of several cases of stabled horses, during an outbreak, contracting the disease, apparently from having been fed on grass, while those which were in the same stable, but which were kept on dry food, remained free from it. All these practical observations, strengthened by Edington's expert and carefully-conducted investigations, prove almost to demonstration that the contagion becomes developed into a virulent condition on grass (or other herbage) under the influence of moisture and especially of dew. Hence, the best possible preventive is restricting horses to dry food during a sickly season. So long as horses are prevented from grazing, no danger would seem to be incurred by keeping horses out while there is dew on the ground.

The water of an affected district does not appear to become infected. "I have taken the water from pools in horse-sickness areas during a season of epidemic and have examined it microscopically, but without success. Under the supposition that the spores under a protean guise might be present among the *débris* and multitudes of animalculæ with which such waters abound, I inoculated horses with as much as 10 c.c. [nearly three drachms], but without any result accruing." (*Edington.*) Some authorities recommend bleeding to the extent of about two gallons as a preventive measure. Vanderplank, of Maritzburg, informs me that he has given with marked success as a preventive a drachm of Jeyes' Fluid in a pint of water once a fortnight to each of the horses under his charge. A method of protective inoculation against horse sickness is naturally desired by Cape horse-owners, who up to the present have hoped in vain. On this point Edington does not give them much encouragement, for he says: "Our microbe is not a bacterium, it is a pathogenic mould, and according to some workers attenuation of moulds is not hopeful. . . . Thus it will be seen that if we are

to succeed in producing some form of protective inoculation, it must be by methods as yet undescribed."

"*Salted*" *horses.*—The common belief is that horses which have had, and have recovered from, an attack of this disease, possess immunity ever after from it; and, consequently, their value becomes much enhanced in districts in which the complaint is enzootic. During my tour in South Africa, I was able to obtain but little exact information on the subject of "salted" horses, which, I had imagined, were an ordinary article of commerce in that country. In fact, though I made many enquiries, I failed to find a single animal of the kind. The few persons I met who had, so they said, seen "salted" horses, informed me that these animals present a dejected and debilitated appearance; that the skin about their head and neck is unusually loose and wrinkled; and that they are liable to relapses of the disease, though in a milder form. Mr. Wiltshire tells me that in the ordinary course of events, they always die eventually of it. From a photograph which I have before me of a "salted" horse, I see that the hair of his mane and forelock stick out in a particularly rough and disordered manner, so that it would have been impossible to have made the mane lie on one side, or the forelock to fall straight down. I have heard that all "salted" horses have this peculiarity of the hair of the mane and tail. Believing as I do in the fatal nature of horse sickness, I am inclined to think that "salted" horses are those which are suffering from the bite of the tse-tse fly, from "surra," or which have recovered from anthrax.

Symptoms of the lung form of horse sickness.—Edington states that the first symptom is a shivering fit with a rise of temperature up to 102° to 103° F. in the evening. The temperature next morning is lower, though not quite normal, and rises still more in the evening. It thus steadily though slightly increases until within a few hours of death, when it may fall below the normal standard. Towards the end there is great congestion of the blood-vessels; the mucous membrane of the eyes and nose assumes a dark red colour; and a copious interlobular effusion takes place in the lungs. The breathing becomes extremely hurried, often about 75 in the minute, with heaving of the flanks. Depression is well marked, and there is an escape into the bronchial tubes, of serum (mixed with mucus), the presence of which, even before any discharge takes place from the nostrils, can be readily detected by the bubbling sound that may be heard by applying the ear to the front of the chest. As this fluid

accumulates more and more in the bronchial tubes, it is discharged from the nostrils, usually in large quantities, and in a somewhat frothy condition, which it soon loses if it be allowed to collect on the ground. It will then be seen to be of a yellow colour. The fluid may trickle from the nostrils, or may be discharged in streams. Although I have never measured, in a fatal case, the amount of this poured-out fluid, I would conjecture that it would be about three or four pints. This frothy serum is altogether different in appearance from the foam tinged with altered blood, which is frequently given off from the nostrils towards, or after, the termination of fatal cases of anthrax. To use Edington's happy expression, the animal is practically drowned in its own blood serum. The internal temperature is high. "One very characteristic symptom is the distension or bulging of the pits above the eyes." (*Hutcheon.*) The froth which is discharged from the nostrils is the result of the plasma which has transuded into the air cells and which is somewhat similar to the white of an egg, being churned up into foam by the breathed-in air.

This disease runs a fatal course, usually, in about four days; taking the period of incubation as about eight days. During the first two days of the attack there is little to attract casual attention. As a rule, the patient dies very suddenly, frequently within an hour or two of the time he was first seen to be ill. The general idea in South Africa is that it lasts only a couple of hours, or even less; the cause of this mistaken opinion being evidently want of ability to recognise the symptoms until they are of a pronounced character. As a rule, the end, from suffocation, comes on very rapidly.

Symptoms of other forms of horse sickness.—"In the *dikkop* form, the pneumonia is not so intense as in the lung form; the special characteristic being the swelling of the entire head.

"In the blue tongue variety, symptoms of pneumonia are not very prominent. The muzzle, lips and tongue become swollen. The tongue also assumes a dark bluish colour. It turns cold, and often becomes too large to be retained in the mouth. Thick, dirty saliva falls from the mouth.

"In what may perhaps be termed the 'enteric' form, colic is the most prominent symptom, and is—as far as my experience goes—invariably fatal. After death, the usual evidences of the disease in the lungs are apparent, though less marked than in the lung variety.

"Another form begins as an ordinary fever, with petechiæ in the white of the eyes; these are more or less large according

to the gravity of the case: I have seen the whole membrane of a deep claret colour, no white being visible.

"This fever, however, at times has a very rapid course, and delirium sets in, with a fatal result in a few hours. In some cases, colic is the prominent symptom. In others, one leg swells, and finally a large abscess bursts, leaving a raw, unhealthy sore to deal with, and a permanent thickening of the part. I have had cases of pyæmia, and death from it.

"Some of these cases, however, are very mild; the liver may be affected; and often there is a discharge from the eyes, similar to than of influenza.

"How I came to identify this with horse sickness, was by seeing these cases after a few days develop into unmistakeable ones of that disease. Lt.-Col. Duck and others have noticed the same thing.

"The temperature is usually high; often 106° F." (*Wiltshire*).

As I have said before there is no essential difference between the three varieties, namely, lung sickness, dikkop, and blue tongue.

"The records of *post-mortem* examinations, together with the temperature observations, all show that it is possible to confer upon an animal the disease in such wise that the symptoms produced will be almost absolutely identical with either of the ordinary forms [lung disease or *paard ziekte* and *dikkop*] acquired spontaneously. On the other hand, it has been seen that, dependent upon the method of inoculation, the symptoms may be somewhat varied, an inoculation into the lung producing the pulmonary form, inoculation into the subcutaneous tissue of the neck giving rise to *dikkop;* while if the means adopted consist in injecting the virus into the flank, symptoms of an engorgement of the abdominal veins and some congestion of the organs belonging to that cavity, as the chief phenomena, will be produced. On the other hand, our inoculation experiments have shown us that it is almost impossible to produce any *one* particular form as a *pure* manifestation, or, in other words, while theoretically we may hold that each of the forms dealt with may be pure forms, yet in practice we find that they each run into one another. Thus in the *dikkop* form some lung mischief, more or less marked, may be looked for, and conversely the lung form usually is attended with more or less manifestation of the *dikkop* type, usually seen on opening into the neck around the trachea, where usually there will be found some exudation lying in the surrounding tissues." (*Edington.*)

Cause of death.—Edington points out that in this disease

death is not due to a poison which is elaborated by the specific fungus; for "the injection into a healthy horse of a considerable amount of filtered blood serum, taken from a horse dying of horse sickness, has not been attended, in my hands, with any subsequent symptom at all referable to or suggestive of horse sickness." With on the contrary inoculations of unfiltered diseased blood, he was almost invariably successful in producing the disease. I may remark that tetanus furnishes us with a good instance of a disease in which death is caused by the poison manufactured by the microbes peculiar to the disease. Edington explains that the fungus of horse sickness grows in the blood, which, by acting as a foreign body, it causes to coagulate, and thus block up the capillaries, so as to produce intense congestion. The animal therefore dies of thrombosis.

Principles of treatment.—Considering the small amount of knowledge that exists about horse sickness, and the fact that little or no benefit in staying its course has been obtained from the administration of medicines, it seems almost futile to discuss the principles of its treatment. One point, however, in its pathology, cannot fail to strike the careful observer, namely, that the congestion of the blood-vessels is a mere symptom of the disease. In, for instance, ordinary congestion of the lungs, however violent and rapidly fatal it may be, there is not the peculiar and copious effusion into the bronchial tubes which takes place during the congestion of the lungs in horse sickness. Hence we may assume that the blood, in the case of this South African scourge, undergoes some morbid change, which permits the escape of a large portion of its watery constituents. The use of antiseptics and salines is self-suggestive. Although our efforts, when combating a disease, should be chiefly directed to remove the cause; still we should try to allay systems, if their violence is likely to kill the patient. Evidently following this principle, Hutcheon advises bleeding, in the first stages of the disease, to the extent of about two gallons. Wiltshire recommends the employment of hyposulphite of soda, chlorate of potash, and turpentine. From the knowledge of the good effects of turpentine in cases of purpura and anthrax, I might suggest its trial in horse sickness. It is a powerful volatile antiseptic, and tends to check congestion by stimulating the involuntary muscular tissue, which is the chief agent in causing the blood to circulate through its vessels. Edington, although failing to cure, mitigated the symptoms by giving 30 grains of antipyrin and 60 grains of quinine four times a day.

Post-mortem appearances in the lung form of horse sickness.—The lungs are invaded by a yellow-coloured effusion of serum, the presence of which can be seen on the outer surface of the lungs, upon which it appears in yellow patches. There is also an effusion into the pericardium and other tissues. The bronchial tubes are more or less filled with serum. The spleen is not specially affected—a fact which serves to distinguish this disease from anthrax. There are generally signs that pleurisy had existed. The blood is somewhat darker than usual; but does not in any way possess the tarry appearance which is characteristic of anthrax.

"On making an incision into the subcutaneous tissue of the neck, along the line of the windpipe, it is common to find lying along, and in many cases surrounding the windpipe, and the larger vessels, a quantity of clear yellow jelly, which consists of blood serum that has been pressed out of the vessels in this situation, and has subsequently undergone coagulation. If the windpipe is opened, it will be found to contain yellow fluid in all stages of conversion into the white froth that one may notice after death around the nose and mouth.

"On opening into the large blood-vessels in this area, the blood will be found to contain clots, while the fluid between may be slightly watery and is invariably of a very black colour.

"On removing the front of the chest, the cavity known as the pleuræ, which encloses each of the lungs, may be seen to be occupied by a large amount of blood-coloured fluid.

"On the surface of the lungs it is common to find a layer, more or less thick and diffused, of a yellow gelatinous material consisting of coagulated blood serum. The lungs are, as a rule, pale in colour, unless the animal has been severely ridden previous to its death. On the surface will be noticed a large number of dark-coloured lines which seem to pass over it and appear like small rivulets. If slices of the lungs be made with a knife and held up to the light, it will be noticed that the lines in question are transparent and of a yellow colour. They consist in fact of the yellow serum exuded in this situation that has coagulated, and they occupy the lines of division between the lobules of the lungs and which in health ought to be scarcely apparent. . , . In the dikkop form, the chief sign is the swelling of the head, neck, or tongue. In this form the lung may be almost or absolutely unaffected to the naked eye." (*Edington.*)

TREATMENT OF WOUNDED ANIMALS IN WAR TIME.

BY VETERINARY MAJOR RAYMENT, F.R.C.V.S.

THE following notes may interest the readers of the VETERINARY JOURNAL. On the 3rd November last year after the attack of the Waziris on our camp at Wana, I found 99 transport mules wounded and one killed. Of the 99 wounded, 42 had to be destroyed at once. In nearly every case the gastrocnemeii tendons just above the point of the os calcis or the flexor tendons below had been severed by sword cuts. Of the remaining 57, about 7 were bullet grazes, or comparatively slight cuts. The others were wounds of an extremely formidable nature. I may mention here that the Waziri swords are heavy curved weapons, with a razor edge. The cut is delivered with no great force, but with a drawing motion, which makes a very long and deeply penetrating wound. In some cases an endeavour had been made to decapitate animals. There were two or three wounds on the neck extending from top to bottom. In one case the wound began just behind the wing of the atlas, and extended to the channel of the neck, severing the cervical muscles and exposing the ligamentum nuchæ. Parallel to it, but posteriorly, were two others of equal extent. In several instances there were cuts on the buttocks twelve to fourteen inches long and three to four deep. There were cuts over the back, over the withers, ears off or split down to the base, tails wholly or partially excised, etc. In one instance a patient had a cut just below the joint of the hock, a second about two inches lower down, and a third just over the seat of curb. An interesting case was a bullet wound in the abdomen, about six inches in front of the stifle joint, with no exit wound. This last did well, the wound of entrance healing rapidly, with no symptoms of abdominal mischief.

With the exception of the usual field veterinary chests, I had no medicines or appliances. These chests contained a small amount of iodoform, some tinct. myrh. co., and luckily a good supply of carbolic acid. Of cloths for bandaging, tow, etc., the quantities were so small as to be practically useless. For the first dressings I used carbolised ghi (clarified butter, always carried by the Commissariat for the rations of native troops), cotton wool from bed pillows, and the coarse cloths used to make bags for carrying grain and flour on service. Afterwards I obtained blankets from the Commissariat, which, torn into strips, answered for bandages. In the course of a few days I managed to get

cheap native cloth and cotton wool from the surrounding villages, through the political officer. The cotton, soaked in a solution of hydrarg. perchlor., dried in the sun and teazed out afresh, did very well. Iodoform dredgers were manufactured out of preserved provision tins.

Out of 57 mules treated, one was destroyed the day after the fight. He was wounded in the hind leg, the flexor tendons being almost severed. The few remaining fibres gave way during the following night. A second, during a severe fit of colic, injured himself so badly that I had to shoot him. A third, when his wounds (severe sword cuts near hind-leg) were healed, was found to have fractured his pelvis on that side, and had also to be sacrificed. This last case, of course, reflects on my diagnosis. I should have detected the incurable injury when examining his wounds. My excuse is, that I had seventy odd wounded animals, so diagnosing had to be done rapidly.

A fourth succumbed to tetanus, a fifth to irritative fever and septicæmia. These last two were the only ones, I consider, fairly lost under treatment, death being the result of some carelessness in dressing on the part of my salutris (native assistants).

Of the others ..	2	were discharged	Cured,	November	11th.
	1	,,	,,	,,	12th.
	5	,,	,,	,,	18th.
	3	,,	,,	,,	19th.
	1	,,	,,	,,	20th.
	1	,,	,,	,,	21st.
	4	,,	,,	,,	22nd.
	3	,,	,,	,,	23rd.
	5	,,	,,	,,	24th.
	1	,,	,,	,,	28th.
	4	,,	,,	,,	29th.
	3	,,	,,	December	1st.
	4	,,	,,	,,	3rd.
	1	,,	,,	,,	6th.
	1	,,	,,	,,	7th.
	1	,,	,,	,,	10th.
	4	,,	,,	,,	12th.
	2	,,	,,	,,	13th.
	3	,,	,,	,,	15th.
	1	,,	,,	,,	16th.
Total	50				

The two remaining were left under treatment at Wana, when we advanced on Kanigoram, and were discharged cured by the salutri in charge about the end of December. All these mules did their work with the Waziristan Field Force for the

remainder of the war. Subsequently they were sent to the Chitral Relief Force, in April, and I recognised many while Veterinary Inspector of the Line during the latter campaign. In addition to these mules, six camels were wounded in the attack. Three were at once destroyed, and three treated, all of which recovered. Five private horses, one destroyed, four treated, two subsequently shot, two cured. Eleven horses of the Cavalry Squadron received sword and bullet wounds in the pursuit; all recovered under treatment. Only two were serious.

The table as below shows the totals :—

——	Treated.	Recovered.	Died or Destroyed.
Mules	57	52	5
Camels	3	3	—
Private Horses	4	2	2
Cavalry Horses	11	11	—
Total	75	68	7

I was the only veterinary officer present. Four salutris were attached to the escort. Unfortunately on the day of the action, one was away on convoy and did not return till some time afterwards. Another was on the sick list. This left only two for duty, which made me very short handed. The cavalry squadron had a salutri of its own. Hardly one of the wounds was touched with water. In the few cases where water was necessary, it was rendered aseptic as far as possible with phenyle. Large pledgets of tow or cotton were placed over smaller pieces steeped in carbolised ghi, and the whole bandaged over the wounds, excluding air, flies, and dust. When they became aseptic, and suppuration ceased, iodoform was dredged over them, the pads and bandages still being continued. I found that in these cases the dressing could be left on two to three days without being touched. In the slighter cases, and those nearly healed tinct. myrrh. co. was used as a substitute for iodoform, as the supply of the latter was very limited.

I have written the above notes to show how much may be done, even with deficient means, if antiseptic treatment be carried out as far as possible, and flies, dust, air, and water, the bearers of the germs of so many fatal diseases resulting from wounds, be excluded. The whole force being entrenched,

the camp was much crowded. I arranged to have all the transport picketed outside the breastwork during the day, and only brought in at night. This gave the muleteers a chance of getting the lines cleaned up daily. The weather was dry and cool, which was much in the favour of the patients.

DEGENERATION OF THE SPLEEN.

BY F. D. MC LAREN, F.R.C.V.S., PENTRE, PONTYPRIDD.

THE subject was a bay horse, six years old, 14½ hands high, weighing 13 cwt., being exceptionally fat. He had been bought recently by a colliery company for underground work.

Within a few days of purchase he became affected with influenza of a mild catarrhal form, but quickly recovered with appropriate treatment, and was sent to work as soon as the appetite returned and the temperature became normal.

A fortnight afterwards he showed signs of weakness at his work, but the appetite being unaffected and his general appearance continuing satisfactory, I was not called for two days, when he was observed to hang his head in the stable and refuse his food, soon becoming unable to stand.

On examination I found the mucous membranes of normal colour, the pulse 50 per minute—strong, full, and regular. There was no sign of pain beyond an anxious expression. The eye continued bright till the last.

Treatment consisted in the administration of stimulants hypodermically, but was of no avail, as he sank rapidly, dying in the course of a few hours.

Post-mortem examination next day showed the heart apparently healthy. The lungs contained about a dozen small tubercles, each containing a quantity of some cheesy material. The condition of the liver was normal. The mesenteric glands were slightly enlarged. The stomach and bowels appeared quite healthy. On cutting into the spleen, however, its substance, which had degenerated into a tarry-looking liquid, ran out of the capsule, and to this degeneration and poisoning of the blood by absorption of the poisonous material from the spleen I attribute the death of the animal.

I think the disease occurred either as a sequel to the attack of influenza, or as the result of a mistaken fattening up of the animal prior to purchase, but whether either of these causes or some other be the true solution, along with the correct pathology of the disease, I must leave the readers of the VETERINARY JOURNAL, to whom I trust this imperfect account will be of interest, to determine.

HORSE-WARBLE ATTACK.

BY THOS. B. GOODALL, F.R.C.V.S., CHRISTCHURCH.

In response to the appeal of Professor McDougall, I have pleasure in placing on record my individual experience of Horse-Warble Attack, and also the deductions I draw from that experience, and my reasons. It is possible I may be wrong, but the notes may be taken for what they are worth.

I have already published a case in the December (1891) issue of the Journal.

I have always noticed the same symptoms. For a time the presence of the larva does not cause any appreciable trouble to the horse, for the ovum is deposited in the late summer or autumn, and no disturbance is noticed until towards the spring, though the larva must be all this time in the skin; but when it begins to grow rapidly, and to give off the irritant material that induces the slight suppuration in which it finds its sustenance in its normal host, the ox; this secretion acts as a poison to its accidental host, the horse.

It is a fact well known to naturalists that the larvæ of parasitic insects have the power of secreting such an irritant; and a very useful lesson may be learnt as bearing on the point. I wish to impress on your readers, by a reference to the vegetable kingdom, and a study of the "galls" and the so called "gall flies"—

There are several kinds of these hypertrophies found on the oak-tree to which we will limit ourselves, of a variety of shapes and sizes:—

The large soft mad-apple oak-gall (caused by *Teras terminalis*) found towards the end of May.

The hard round marble-gall (caused by *Cynips Kollari*) of commerce, mature in September.

The soft round green and red galls (caused by *Dryophanta scutellaris*) on the under surface of the leaves, and likened by some to cherries, falling and ripening with the leaves in October and November.

The beautiful "spangle-galls" (caused by *Neuroterus numismatis*) almost resembling small fungus growths on the under surface of the leaves, and also falling with them.

The "cotton galls" (caused by *Andricus ramuli*) resembling a bunch of cotton-wool packed closely together, and mature in June and July.

The artichoke-gall (caused by *Aphilotrix fecundatrix*) resembling that vegetable in miniature, and mature in August and September.

The beautiful bunches of "currant-galls" (caused by *Spathegaster baccarum*) hanging from the catkins of the oak, and mature towards the end of May, and several others.

The insects causing each of these "galls" have many points in common; they all belong to one family, the Cynipidæ; how then are we to account for this diversity in the shape and character of the growths?

The mother insect is supplied with a beautiful and wonderful instrument for piercing the young bark of the tree, in the situation where the young larva, when hatched, will eventually find the nourishment it needs, in the sap of the tree; and in the wound so made by her she deposits her egg. Until quite recently it was supposed that she deposited a minute spec of an irritant with the egg, but the recent researches of Professor Adler appear to prove that when the larva leaves the egg, it has the power of secreting a something which arrests or diverts the flow of sap around its habitat, and this induces the formation of a hypertrophy or "gall," in which, in some cases, a single larva, as in *Cynips Kollari*, and in others numbers of them, hundreds sometimes, as in the mad-apple and cotton-galls, live and grow and eventually pupate.

But our point is, how different must be the character of the minute spec of irritant secretion of each kind of larva, to produce such a variety of forms of growth! And a study of the methods of insect life in this light enables one to account for phenomena caused by parasitic insects other than those that attack trees.

There is much more in the life-history of "gall-flies" that would be found instructive and intensely interesting to the student of pathology, as, for example, their alternation of generation, but this would be out of place here.

For all that theorists have said and written to the contrary, the presence of the larvæ of the Hypoderma bovis, do not interfere materially with the health of their normal host, the ox, they are, in fact, known by the name of "proof worms" —and are regarded as a sign of the "bearer" being a "good doer." Their emitted secretion causes slight suppuration in the sub-cutis of their normal host, in which they are found in great numbers—(I say nothing of the harm done by them to the hides, which is enormous, but of the effect of their presence in the skin of the living ox)—but this same secretion acts as an irritant poison in the system of their accidental host, the horse, where I have never found more than one or two.

In the cases that have come under my notice (always between the months of January and May), I have invariably found the same symptoms.

First, before there is any local manifestation, there is a rise of temperature, and great constitutional disturbance, then, after about four-and-twenty hours or so, there appears a hard, very painful swelling, which the horse cannot bear to be touched, and, in my cases, always in the region of the wither, just in front of the shoulder.

Careful examination will reveal the small breathing aperture of the insect, in the skin—once seen, always easily recognised again. To remove the "grub," this is slightly enlarged, and pressure applied, when the larva is expelled. I would warn practitioners that it is essential that this opening should be first enlarged and by a blunt-pointed bistoury, for if the grub is killed by squeezing or cutting, and any of its contents escape into the sac, if, in fact, it does not all come clean away, it causes trouble for weeks and months after, by the formation of an occasional small abscess.

It is my experience that the larva is only found in horses that have been turned out in the summer (when the mature fly is on the wing) either with cattle, or on land adjoining their pasture, and I have always regarded it as an accidental infestation by an abnormal parasite.

The enquiry is for the Imago or perfect fly. It has not yet been identified, and, if I am right in my conclusions, it never will be, because its abnormal host cannot bear it to the full stage of larval development.

I had a mare of my own which I found to be affected in January, 1894, and I hoped I might, through her, be the fortunate possessor of a mature fly, and for this purpose it was my intention to leave the larva for development, but the swelling became so large, and so excessively painful, and the poor mare was thrown so much out of health, that I was compelled to relieve her. From her symptoms I should imagine that in a case of non-interference nature would throw off the offending parasite by suppuration long before it reached maturity.

I have pleasure in forwarding the larva I took from my mare, which I fortunately preserved, for Professor McDougall's acceptance. There is also a broken larva I took from another horse, in which I had afterwards the untoward symptoms I have mentioned.

Editorial.

A HIGH-HANDED PROCEEDING.

I HAVE some hesitation in bringing before the readers of the VETERINARY JOURNAL a matter which may seem to be to a certain extent a personal one. My excuse must be that what concerns a part of the veterinary body in reality affects the whole, if there is to be any true *esprit de corps* among us; still more must this be the case when the training of the young generation is concerned, because an injury done to the youth of the country may go on, in process of time, to become a national disaster. My case is briefly this: The New Veterinary College and the Glasgow Veterinary College admitted students on the understanding that if they presented certain educational certificates recognised by the Royal College of Veterinary Surgeons, such certificates would be accepted as evidence of fitness, no matter whether they had all been obtained at one time or not. I now learn that the Dick Veterinary College acted under other instructions, a letter to the effect that the certificates must be all obtained at one sitting having been sent by Mr. Hill, the secretary of the R.C.V.S., to Mr. Mettam of the Dick College on 3rd October, 1894. It is to be presumed that the Royal Veterinary College, London, acted under similar instructions to those sent to the Dick College, as it was stated by Mr. MacFadyean that students were not admitted to that college unless they had obtained all their certificates at one sitting. (I may here mention that Mr. MacFadyean's statement was contradicted at the meeting of Council on 4th December, 1895.) On 23rd November, 1894, that is, eighteen days subsequent to Mr. Hill's letter to Mr. Mettam, Mr. Rutherford, the Scottish Secretary, received instructions to accept educational certificates prior to the first professional examination, and he was told that "it does not matter to the Council how or when they were obtained." Students were consequently admitted to the New Veterinary College, Edinburgh, and to the Glasgow Veterinary College on these terms. On 23rd November, 1895, the following copy of a minute passed by the Examination Committee of the R.C.V.S. on the previous day was sent to Mr. Rutherford, viz., "That the secretary of London and Edinburgh be instructed not to accept in future any educational certificate, unless it embraces the necessary subjects, as specified in the first schedule, and unless all the subjects were passed at one

time." This, of course, caused a good deal of consternation and led to a considerable amount of correspondence, it being felt that a door was thus being opened for actions at law against the principals of the two Scottish Colleges and by them against the Council of the R.C.V.S. I maintain that the Committee had no right to endeavour to thrust such a resolution upon us; the very attempt to do so was a plain violation of the regulations laid down by all committees and councils known to me. It appears that the motion was made in the committee by Mr. MacFadyean, and seconded by Mr. J. A. W. Dollar, but as Mr. Dollar was not a member of the committee, his seconding was pronounced incompetent by the chairman. Are we to suppose that this was a mere mistake on the part of Mr. Dollar, due to his youth and inexperience? The President of the Council, who was present at the meeting of the committee, voted against the resolution, and declined to accept a particle of responsibility therefor. Notwithstanding all this, the resolution was passed, and then, to prevent further difficulties, the President of the Council at once called a special meeting, to be held on the 4th December, that being the first possible day on which it could be legally held. Let it be noted that this day was likewise the last day on which students' examination fees could be accepted by the Scottish Secretary. Mr. Rutherford had, therefore, to trust to the telegraph for instructions at the last moment. Fortunately, the difficulty was overcome, and the attempt on the part of the committee to dictate to the Council, and through it to the schools, was rendered abortive: but the risk was much too serious, and the possibility of harm being done to students and teachers, as well as to the whole body corporate, much too great to permit me to pass the matter over in silence. I make no further comment, and leave the readers of the Journal to form their own opinion as to the motives which prompted the conduct which I have described.

THE VETERINARY CONGRESS AT BERN.

[In answer to enquiries we have to state that *Rauschbrand*, as mentioned in our first notice of the Congress, which appeared in our November issue, is the German name for the disease in swine known in France as *Charbon symptomatique* and in England as *symptomatic Anthrax*, or Black-leg.—Ed. V. J.]

We continue our report of the Congress, abridged from the

very full and excellent report given in the *Berliner Thierärztliche Wochenschrift*:—It was unfortunate that the long and prolix debate on tuberculosis had made such demands on the patience of the members, but it was quite natural that after a sitting of eight hours there should be unmistakable signs of weariness, and that when the voting on tuberculosis was finished the members should with one consent make for the door of the hall. The consequence was that a very important Report by the anatomical section of the Congress was forgotten or neglected by the majority of the members, about three-fourths of whom had left before the report was read. This report explained that the German Anatomical Society had, some years ago, undertaken the publication of a new anatomical nomenclature for general adoption. It was most desirable that the veterinary profession should follow this example, as a great deal of laxity and uncertainty—even incorrectness—prevailed in their anatomical nomenclature. It was likewise desirable that a Latin nomenclature, to be used by all veterinary surgeons throughout the world, should be prepared, and it was thought that the sitting of the Congress was a good opportunity for arranging the matter. It was agreed by the Congress, after hearing the report, as follows—(*a*) That the Latin nomenclature adopted by the German Anatomical Society for human anatomy, should be adopted as a basis for international veterinary purposes; (*b*) That the adaptation of the nomenclature to veterinary anatomy should be undertaken by a committee chosen from among the members of the Congress then present, with power to add to their number—the work to be suitably divided, and two conveners to be appointed to systematize the work; (*c*) That, a year before the next Congress (to be held in 1899), a meeting of the committee (to be called the Veterinary Anatomical Commission) should be held in some neutral place to be chosen by the conveners. All proposals made by the Commission will be published in the veterinary journals and sent likewise in a printed slip to all veterinary teachers, with the request that they will give an opinion distinctly for the one or the other proposed form in the event of there being concurrent forms; (*d*) That the final settlement of the form to be adopted by the veterinary profession should be made by the votes of the Commission. The following members were chosen to form the Commission, viz., Arloing (myology), Lorge (respiratory and digestive organs), Martin (neurology), Müller and Ellenberger (osteology and

syndesmology), Rubeli (organs of sense), Schmaltz (urino-genital organs), Sussdorf (vascular system), also Dr. von Czako, of Budapest. The work has thus been entrusted to German and French-speaking members; but, doubtless, surgeons of other nationalities will give in their adhesion. A motion was brought before the last full meeting of the Congress, by the convener of the anatomical section, to the effect that the expenses of the Anatomical Commission be paid out of the funds of the next Congress, and this motion was accepted without dissent, the members being, in truth, averse to all further discussion. This brought the business of the Congress to a close. The settlement of the next meeting-place was deferred to an informal meeting, which was to take place at Interlaken, whither the members were to make a pleasure trip. It may be here stated that the place fixed upon was Baden-Baden, and the year 1899.

It would be ungrateful to pass over without special mention, the courtesy and civility shown by the Swiss surgeons to their visitors. Everything was done to make the visit of the members an agreeable one, and special thanks are due to Professor Rubeli for his labours in finding house-accommodation for the visitors—no easy matter, as an agricultural show was going on in Bern at the same time. The members had an opportunity of visiting the Veterinary Institute in Bern, which, lately restored after being burnt down, is a model of what a veterinary school ought to be. In the Institute, the members had an opportunity of seeing Professor Degive, of Brussels, perform, with inimitable grace and dexterity, an operation upon a cryptorchid.

The festivities at Interlaken were of the most enjoyable kind, and were attended by about 150 members of the Congress, some of them accompanied by their wives. The Swiss surgeons were most cordial in their hospitality, and welcomed their foreign brethren very heartily to this beautiful part of their romantic and picturesque country.

If we were to summarise our impressions of the Congress we should say that everybody seemed to be thoroughly pleased. These international meetings, at which the best men of all countries assemble to measure their strength with each other, and to concert schemes for mutual benefit, are of great and abiding importance. It is of the utmost utility and extremely interesting to come into personal contact with eminent men from foreign countries and to learn to respect them; it stimulates effort on the one hand and curbs vanity and conceit on the other. The Congress was attended

by a great number of men of the highest rank in the scientific world—men of acknowledged merit—and the debates have undoubtedly contributed to the clearing away of doubts on troubled questions, and are destined, we are sure, to bear valuable fruit in the immediate future.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL COUNCIL MEETING.

A SPECIAL MEETING of Council was held at the College, 10, Red Lion Square, London, on Wednesday, Dec. 4th, 1895, to consider communications from Principals of Schools in regard to threatened proceedings concerning educational certificates, and to receive counsel's and solicitor's opinions, and to decide thereon.

The PRESIDENT (Mr. J. F. SIMPSON) was in the Chair, and the following members were present:—Gen. Sir Fk. Fitzwygram; Professors Edgar, McCall, McFadyean, Penberthy, W. O. Williams, and Williams; Messrs. Abson, Barrett, Beddard, Dollar, Fraser, Hunter, Hunting, Kidd, Mason, and Mulvey; and Mr. A. W. Hill (Secretary), and Mr. Geo. Thatcher (Solicitor).

The minutes of the last meeting having been read and confirmed,—

The PRESIDENT, in opening the subject which the council had been called to discuss, said that there appeared for a long time to have been considerable doubt in the minds of Secretaries—certainly in the minds of the Scotch Secretaries and the Principals of Schools—as to whether it was necessary that a student who presented himself for his A examination should produce certificates granted by certain bodies to the effect that he had passed certain subjects which the Council insisted upon, and further, that he should satisfy the Secretary of the College that the subjects had been passed at one and the same time. From correspondence which he (the President) would lay before them, they would find that what might be called partial, or divided, certificates had been accepted hitherto from some of the schools. The Secretary of the Scotch Examiners, acting for the College, desired now to be very clear upon the subject. On October, 1894, Mr. Rutherford wrote to Mr. Hill, asking whether divided certificates would be acceptable to the College; and Mr. Hill gave him the opinion that the certificates could not be accepted if divided. The matter was then laid before Mr. Hunting, then President, together with the Secretary's opinion, that it must be at one examination. In reply Mr. Hunting wrote: "*Re* Mettam, the Council decided to accept the certificates mentioned in our list. If the educational bodies give the certificates, it does not matter to us how they were obtained. I know no published rule of ours saying they must be passed *en bloc*." That was the letter which appeared to have guided Mr. Rutherford, and it was for the Council to say whether it conveyed the meaning that divided certificates would be accepted. On October 25th Mr. Hill wrote, as instructed by Mr. Hunting, to the Scotch Secretary. The present question had arisen owing to Mr. Hill having, on the 19th of last month, written to Mr. Rutherford, refusing a certificate, and stating that all the subjects must be passed at one time. To this Mr. Rutherford replied on the 28th that this last instruction traversed his previous instruction of October 23rd, 1894. He also wrote to the President (Mr. Jas. Simpson), pointing out that the authorities of the Dick and New Colleges knew of no such order, and that,

as their students had been expecting to go up on the instruction of Oct. 1894, already twice acted upon, it was unfair to make a new instruction now. He laid Mr. Rutherford's letter before the Examination Committee, and on November 22nd they resolved "That the secretaries in London and Edinburgh be instructed not to accept in future any educational certificate unless it embraces the necessary subjects as specified in the first schedule, and unless all the subjects were passed at one time." Professor Dewar also wrote calling attention to the letters of 1894, and stating that the present action might open up delicate and even legal questions. Professor Williams also wrote stating that the order issued was in direct violation of the arrangements on which the students had been entered. Mr. Rutherford also wrote stating that he had handed a copy of the new instruction to the Scotch Colleges, and the authorities of those Colleges were much put about at the instruction, calling it a "breach of faith" and "unjustifiable." Their legal adviser having given as his opinion that the educational certificates must be complete in themselves, and that two or more certificates relating to different subjects, although together covering all the required subjects, could not be accepted, he (the President) seeing that the matter was of considerable importance, asked to be allowed to take Counsel's opinion. Permission having been given, Mr. Morton Smith was consulted, and advised as follows:—"The Council can only act as provided by the bye-laws; and if the provisions of the bye-laws seem to work an injustice, the only remedy is to alter them, but until they are altered they must be followed strictly. Bye-law 52 and the first schedule must read together. The use of the plural 'certificates' in bye-law 52 does not affect the question raised in the case, because it is 'one of the certificates specified,' etc., that is to be produced. In order to decide the point raised, the schedule must be examined. and I consider that after such an examination, the true answer to the question put is as follows:—(1) That in all cases where a 'certificate' is mentioned, it means a certificate complete in itself, and which must include all the subjects specified in reference to such certificate. For sake of example I take No. 31, University of St. Andrews. A complete certificate of this body would have to be produced, and not two certificates showing a pass at two different examinations. (2) But I must point out that in cases where 'certificate' is not mentioned in the schedule, as in 40, 41, 42, and 49, then if the examining body allows the qualifying examination to be taken in two parts, the Council must accept a certificate showing a complete pass, although on the face of the certificate it shows that the examination had been allowed to be taken in two parts. (3) The only reference to plural certificates is in No. 39, but this case does not really arise in consequence of the Medical Council having required all the subjects to be included in one certificate." After reading this "opinion" the President stated that in a letter dated November 28th, 1895, Mr. Rutherford said he had no educational certificates presentable at the coming examination and would not have until he could ask for them when taking the fees. He stated the question at issue and added that two of the schools threatened serious proceedings if the instruction was adhered to. Mr. Mettam in writing to Mr. Hill on November 27th, said he had been informed that the Council had resolved not to accept educational certificates unless they embraced all the subjects and the subjects at one time, and expressed the hope that the Council would exempt from its provisions all applicants who might in good faith have begun their course of study under the old regulations. He referred to the instructions given in Mr. Hill's letter of October 18th, 1894, that the Council had decided to accept the certificates mentioned in the list and that if the educational bodies gave their certificates it did not matter to them how they were obtained. Since then the examining bodies

in Edinburgh had allowed students who failed in one or more subjects to come forward again and pass in those while getting credit for the subjects in which they had previously passed. The certificates granted in those cases had until now been accepted without objection and he submitted that the Council should continue to accept such certificates in the case of such students as had already begun their course on the faith of the regulation hitherto recognised. He hoped the Council would see the equity of this and act upon the principle accepted in legislation, viz., that such new rules should not be retrospective. The point was he added a serious one, as a considerable number of the Edinburgh students had commenced their course on the faith of the understanding and practice referred to.

Mr. HUNTING asked if the council had passed any such resolution as that mentioned by Mr. Mettam? As far as he remembered no such resolution had ever been passed.

Professor MCCALL said he had never heard of such a resolution.

The PRESIDENT proceeded to read a letter from Mr. Rutherford, of November 28th, enclosing copy of a letter from Messrs. Macgregor & Co., of Edinburgh, pointing out, on behalf of Professor Williams and the students and others of the new veterinary college, that the instructions of the Council that the secretaries in London and Edinburgh were "not to accept in future any educational certificate unless it embraced the necessary subjects, and also, unless the subjects are passed all at one time," would, if enforced at present, be a flagrant violation of the terms and conditions upon which many of the students had made preparations for joining the veterinary profession, and would also give rise to various claims for damages against the responsible parties. They pointed out that it was very unusual in any profession to pass a prohibitive law of that sort without reserving the rights and interests of parties who had been induced to commence their apprenticeship under the former rules. They also said that by the Charter of the College the Council were not entitled to make any new Order, Rule, or Bye-law. or to repeal an existing one without three months' notice, and a special meeting being called to confirm the same, and that as the alteration of the rule by the Committee was *ultra vires*, Mr. Rutherford would be held liable in damages, and other consequences resulting, if he insisted on giving effect to the instructions by refusing to accept certificates of students who had made arrangements under the former rules. After reading the letters, the President said that as time was running very short he had instructed the Secretary to call that special meeting of the Council. Bye-law 56 would really make it illegal for Mr. Rutherford to collect fees after that day (December 4th), and he thought by summoning the Council at once and getting their decision he could telegraph full instructions as to the certificates that afternoon.

Professor MCCALL said Mr. Rutherford was due at Glasgow at two o'clock that day to receive the fees.

The PRESIDENT said it had occurred to him that the fees might be accepted under protest, and he had written to Mr. Rutherford to that effect. These were the facts of the case, and it was for the Council to come to some conclusion, which might be at once telegraphed to Mr. Rutherford. It was a matter of very great importance, for he did not know where it was likely to end if they now declined to receive those certificates. If they insisted upon that course, it was a question whether or not they must declare the examination of students who presented such certificates last Christmas that way null and void.

Professor MCFADYEAN asked whether a letter had been received from the Royal Veterinary College, requesting that the matter might be submitted to that meeting.

The PRESIDENT said Mr. Powys had written stating "that at the pro-

fessional preliminary examination held by the College of Preceptors on September last, some of the candidates who had since entered the College as students passed in a portion of the obligatory subjects, but not in the whole of them. The College of Preceptors are holding another examination very shortly, and I should feel greatly obliged if you could ascertain from the Council of the Royal College at their next meeting whether it will comply with their requirements in regard to general education, if the students to whom I referred are able to satisfy the examiners in those subjects in which they failed in September, now, or at any subsequent examination of a similar nature that the College of Preceptors may hold. Perhaps you will kindly let me have a reply to this at your earliest convenience as it is naturally a matter of considerable importance to the students whom it may effect."

Mr. HUNTING thought the letter had a most important bearing on the subject.

Professor MCFADYEAN asked whether the case of students whose certificates had to be accepted or rejected now was governed by the bye-laws of 1894 or 1895? The students who entered in 1894 were governed by the rules in force then.

The PRESIDENT: Certainly: the bye-laws of 1894.

Mr. HUNTING said he would like to point out two rules in the 1894 bye-laws. One was, "That the students shall produce a certificate that they have passed the preliminary educational examination in force after January 1st, of the General Medical Council, and produce an educational certificate recognised by that body." That rule was not in force now, and the Council were going to complicate matters if they allowed it to be brought in. Then regulation 23 said, "That certificates admitting students to any of the Veterinary Colleges without educational examination be lodged with the Secretary;" and that rule was not in force now. Those regulations had been left out by some accident from the bye-laws.

Professor MCFADYEAN said the whole contention was, that a student was induced to join under the regulations in force in 1894. The bye-laws might have been altered since then. Assuming that the 1894 bye-laws regulated the procedure, was the case of those students governed by the bye-laws in force when they entered, or in force when they presented the certificates? In fairness, it should be the bye-laws in force when they entered.

Mr. BARRETT: Certainly. He took it that the bye-laws of 1895 would not come into effect until January 1st, 1895, and therefore students entering in 1894 would be amenable to the bye-laws of 1894.

Mr. HUNTING submitted that the College knew nothing about a student until his first examination.

Professor MCFADYEAN said that thirty weeks study was imposed upon him before that.

The PRESIDENT said the Council had considered students in that way, and intimated that certain alterations would not apply to students entering the schools.

Mr. HUNTING said the Council had gone out of its way to make a special bye-law for such cases.

Mr. J. A. W. DOLLAR asked if the Council did not recognise a student until he presented himself for his first examination, why was it that the new bye-laws were preceded by a clause saying that the bye-laws relating to the four year's scheme should not apply to any student who entered before a certain date?

Mr. HUNTING said that was the exception which proved the rule.

Mr. BARRETT submitted that the moment a student was registered the Council exercised control over him, and therefore he was governed by the bye-law in force at the time he entered.

Professor McCALL said the student was registered in the school and not in connection with the College. He thought counsel's opinion was largely based on the fact that the examinations were being conducted under the General Medical Council. Professor McFadyean had taken very great care to expunge that part of it, and the examinations were not being so conducted.

Professor McFADYEAN said he took no such care, and if Professor McCall would look in the schedule he would find it mentioned there.

Professor McCALL read the regulation passed on the 7th September, 1893: "Students who enter the Veterinary Schools shall, prior to the first professional examination by the R.C.V.S., produce a certificate that they have passed the preliminary general educational examination in force after 1st January, 1892, of the General Medical Council, or produce an educational certificate recognised by that body to the Secretary of the R.C.V.S." He maintained that Professor McFadyean was the very individual who, when the Council were going over the regulations a year ago, expunged the words "General Medical Council."

Professor McFADYEAN said that it stood at page 74 of the 1895 bye-laws.

Professor McCALL said that not one word was mentioned of the Medical Council.

Mr. HUNTING said that Mr. Morton Smith, in his opinion, stated that there was only one clause in the bye-laws, No. 39, mentioning the word "certificate" in the plural, whereas there were two, Nos. 39 and 50.

Professor McFADYEAN said that one governed the other. There were leading certificates in each grade and in honours, and, therefore, the plural had to be used in No. 50.

Professor WILLIAMS said the leading certificates could not be obtained at one time; they were part certificates.

Mr. BARRETT pointed out that, by the resolutions of the General Medical Council, the certificates comprised in the first schedule were not required to be passed at one and the same time.

Professor McCALL said that until the 23rd November he did not know there was any attempt by anyone to call in question the legality of the examination of students by the bodies that had been constituted for that purpose. Hence, when he issued the prospectus of his college he intimated, according to the regulations of the R.C.V.S., that the examination could be conducted at any time prior to the student presenting himself for the first professional examination, but he did not say that students must pass that examination all at one sitting. He held that a student had a claim upon him for admission to the first professional examination if he could produce a certificate, and certainly if the student had a claim against him, he (Professor McCall) had equally a claim against the College. He had had no communication that such a method of passing the examination could not be received. Was it needful that the College should be very stringent in the admission of students into the profession? He had received a letter from Dr. Morrison, a gentleman recognised in Scotland as one of the first educationalists, a man who conducted the examinations, with Dr. Mackay, for the Educational Institute. The letter was as follows:—

22nd December.

Dear Professor McCALL.—Referring to our conversation this forenoon, I have no hesitation in giving it as my very decided opinion, based on a somewhat long experience, that to require veterinary students to pass the whole preliminary examination at one time is educationally a mistake. It stands, I think, to reason that a young man will derive more benefit from concentrating his attention on one or two subjects at one time than by dissipating his efforts on all the subjects required at the examination. I have consulted many of my professional brethren, and their unanimous verdict is in favour of my contention.

Professor WILLIAMS requested that the minute of the Educational Committee might be read.

Mr. HUNTING submitted that the Council had nothing to do with the Committee.

Mr. MULVEY, as Chairman of the Committee, pointed out that the resolution of the Committee was not intended to be sent to the schools, but was simply for the guidance of the President.

The PRESIDENT: That is incorrect. He read the minute as follows: "That the Secretaries in London and Edinburgh be instructed not to accept, in future, any educational certificates." That was an instruction which was carried out by the Secretary.

Professor EDGAR asked if any resolution, which any committee might pass, override the bye-laws.

The PRESIDENT: Certainly not.

Professor MCFADYEAN said he was the mover of the resolution, and he would not attach to it any greater weight than that which attached to the individual expression of opinion given by the late President in October, 1894. It did not override the bye-laws, but was an attempt to interpret them.

Mr. HUNTING said that the Council were more or less bound by the official letter.

Prof. MCFADYEAN said he never heard a more monstrous proposition than that a letter written by an official of the Council, interpreting a bye-law, was actually to petrify that interpretation and make it law. Divided certificates had been refused in London, and thereby there had been a considerable loss in fees. The Scotch colleges professed a desire to be governed by Mr. Hunting's interpretation of the law, when he was President, but the London College had no knowledge that any such interpretation had been given. There were two important questions to be considered. He would take the least important first, which was, that even-handed justice should be done to the various schools. Everybody knew that in London, since the new regulation regarding the higher preliminary examination came into force, divided certificates had not been accepted. The London College considered that it must be an educational certificate, entitling to registration as medical student. He heard with amazement that Professor McCall, who was a Member of Council at the time the new regulations were passed, remained in ignorance of the fact that an attempt, and it was supposed a successful one, had been made to put the general education of the veterinary student on a level with that of the medical student. It was clear that if the Council were going to decide now that students at present in the schools in Scotland, were to be admitted to the examinations with divided certificates, they were about to perpetrate an act of injustice on the London School. Further, it would not meet the case if the Council decided to strain at the law, and let those students up at present, although they were not quite satisfied that their certificates were all that the law demanded, because a similar claim might be made with reference to the students who joined last October. If divided certificates were legal in Scotland, the London School not only asked that it might be allowed in England, but insisted on its being allowed. The second point was, was the examination according to the interpretation which the London School placed upon the bye-law—that was, that it must be the same grade as that exacted from the medical students—too high? That was the point the Council had met to discuss. Although it might even be shown that there would be a great falling off in the number of students coming up for the examinations, that would, perhaps, not be a conclusive reason for reverting to the old system of examinations; but it had not been tried long enough yet, and he had no apprehension whatever but that the profession would be amply recruited while the examination remained as high as it was intended to be by

the Council. He begged to move, "That the Council decides to interpret the bye-laws relating to general education in the sense of the Medical Council."

Prof. EDGAR seconded the motion. He said he believed it was the intention of the majority of the gentlemen who worked the matter out, that the standard of examination should be raised, and maintained at the level of that required by medical students. If the piecemeal examinations suggested by the Scotch schools were to be permitted, it would mean that a student of the most moderate attainments might struggle through every subject, one by one, until he could claim to be registered as a veterinary student. The bye-laws were so clear upon the subject, that one of the leading veterinary schools had acted upon them, and now the Council were asked to make relaxations for those gentlemen who had not been at the pains to place a correct interpretation on the bye-laws. He thought it was ill-advised for the schools to threaten legal proceedings if the Council attempted to carry out the bye-laws.

Sir FREDERICK FITZWYGRAM said he was strongly in favour of a higher standard of education, and of keeping it up to the requirements of the bye-laws. It was not a question of whether that bye-law was wise or not, but simply a question whether, under particular circumstances, it would be wise to strain the powers of the Council, and reject certificates under which—wrongly, he thought—though innocently, students had been admitted into the veterinary colleges. It could not occur again, because the bye-laws were perfectly clear. He therefore moved, "That the Council will not impose the strict terms of the bye-law regulating the educational certificates in the case of students who have already been entered as students of a veterinary school."

Mr. HUNTING seconded the amendment. Professor McFadyean, he said, had mixed up intentions with fact. He agreed that it was the intention of the Council that their matriculation examination should be equal to that of the medical profession, and he always thought it was equal; but when he looked over the bye-laws he found that some clause or another had been missed out, and that the bye-laws did not express the Council's intention. In saying that the interpretation of the bye-laws was clear as shown by one school having interpreted them, Professor Edgar was guilty of a fallacy. Surely the other argument, that three schools interpreted them in another way, was much stronger. With regard to Mr. Morton Smith's opinion, it was not like the law of the Medes and Persians, and when he stated that there was only one clause which did something or other, and there turned out to be two, he (Mr. Hunting) did not know that very much value should be put upon that opinion. There was something else besides law and logic to guide men in this world, and that was expediency. Certainly, the expediency just then was in favour of not stopping students and raising discords among the profession and the schools. He held that, whether the action taken at the professional examination was right or wrong, or whether the opinion of Counsel was right or wrong, it was right and expedient for the Council at the present time to telegraph orders to the secretaries to follow the arrangements that had been in force up to the present time. If the bye-laws required to be altered, and he held they did, let the Council set to work and alter them by giving three months' notice.

Mr. DOLLAR said that practically the position could be crystallised in a very few words. There were certain bye-laws, regulating examinations, which might he interpreted in one or two ways. The bye-law might be interpreted so as to make the preliminary examination equal to that of the General Medical Council, or the Council might accept a debased certificate. But no exceptions could be made to the bye-laws. Sir Frederick Fitzwygram's proposition was that the Council should have a hard and fast bye-law, making their examination equivalent to that of the General Medical Council, and that

on all ordinary occasions the Council should adhere to that bye-law, but that by some mental process which he was rather inclined to place under the category of "expediency," the Council should on that particular occasion deviate absolutely from the line which they had laid down for themselves, and should recognise a "debased" certificate. If that was the highest opinion on the legal question which Mr. Hunting could submit, then he thought the Council would not regard him exactly as a high legal authority. Even in the event of the Council coming to the conclusion to allow the students to go on with their studies, the Council would be acting *ultra vires*. The Council must be bound by what they had done in the past. They had passed certain bye-laws legally, and if it was their intention to have an examination in the future which should qualify the men to stand on the same level as the men passed by the General Medical Council, then they could make no concession, and, if they did make a concession, they would be acting beyond their powers. Either the Council must have a high and a proper examination, or by their present action so interpret the bye-law that they would be for ever afterwards bound by it.

Mr. HUNTER asked whether anyone could give a certain answer to the question as to whether the examination of the Medical Council was taken in one or not, and whether it should be called a debased examination if it was passed in more than one sitting. He did not see that the standard was very much lower if the examination was passed twice.

Mr. BARRETT said he had with him the resolutions of the General Medical Council for 1895, and to his mind it was perfectly clear that the certificates comprised in Sections I. II. and III. might be passed at different times piecemeal, but that certificates in Section IV. must be passed at one and the same time. The subjects comprised in the first schedule of the *Veterinary Register* were for the most part those comprised in Sections I., II., and III. of the General Medical Council, and therefore those subjects need not be passed at one and the same time. A certificate was presented to the Council and they were bound by the bye-law, and the bye-law of the General Medical Council to accept it, and had no right to inquire how it had been obtained. Everyone was saying, Why should we accept a debased certificate? He submitted that the Council aecepted a certificate which was equivalent to that required by the General Medical Council in asking veterinary students to obtain those certificates. By asking them to pass subjects at one and the same time, they were asking them to do very much more than they were required to do by the General Medical Council.

The PRESIDENT said it certainly seemed to prove that the General Medical Council had arrived at the conclusion that it was hardly wise to keep on insisting upon all the subjects being passed at one and the same time, and they had made an alteration from the 1892 regulations in consequence. No member of the Council had any right to talk about the certificates comprised in the first schedule as being debased certificates. The Council had no right to ask how the student got the certificate, they had merely to examine the certificate, and, having satisfied themselves that it had been honestly obtained it was their bounden duty to accept it. Bye-law 52 did not say anything about the examinations being passed piecemeal, and nothing as to the mode of obtaining a certificate. He submitted that the Council as a body had almost entirely misinterpreted the resolutions of the General Medical Council. He would submit as a second amendment, "That in the opinion of this meeting the certificates comprised in the first schedule of Bye-law 52 be accepted as a sufficient educational test irrespective of the mode in which such certificates have been obtained."

Professor MCFADYEAN said that the amendment just proposed was incompetent without three months' notice.

The PRESIDENT said that in face of the resolution of the Council of October, 1894, which stated that there should be no partial or divided certificate, it would be necessary to give three months' notice.

Mr. HUNTING said the resolution of 1894 was not in force, and was wiped out when the bye-laws were altered.

Mr. BARRETT said it was illegal if it was in force.

The PRESIDENT said Mr. Hunting was quite right, so that the amendment was in order.

Mr. BARRETT said that why he objected to Sir Frederick Fitzwygram's motion was that he evaded the difficulty of asking the Council not to put too strict an interpretation on the bye-law. He (Mr. Barrett) thought that was the very thing the Council should do. He thought they should adhere to the bye-law.

Professor WILLIAMS thought that the bye-laws applicable to the students who entered last October were those bye-laws which were made previous to October, that was, during July, 1894, although they were not published till the commencement of 1895. A great deal had been said about the higher educa tion and about debased certificates and that sort of thing, an argument which he thought totally unworthy of an assemblage like the Council. If a man obtained his knowledge, whether he obtained it at one time or two or three times, that man was equally as good as the man who obtained it at one time. He was very much surprised to hear Professor McFadyean say that the regulations of the Medical Council had nothing at all to do with the matter, when Professor McFadyean was the man who did his level best to delete that resolution. He had no hesitation in saying that it was a sort of compromise between Professor McFadyean and Professor McCall, that "if you back me in my application for a summer session, I will support you in doing away with the regulations of the Medical Council."

Professor MCFADYEAN emphatically denied that statement.

Professor MCCALL said he remembered distinctly Professor McFadyean asking him whether he would consent to a summer session, and he (Professor McCall) said to him, "I have no desire to dictate to you how you should conduct your college here, and I hope you will allow us to conduct our own. Speaking for myself, I do not wish for any summer session."

Professor MCFADYEAN denied the language given expression to by Professor McCall.

Professor WILLIAMS said the proceedings of the Committee, and even the very fact of the Council having been called together, were totally inconsistent with the resolutions upon which the Council had acted. He, therefore, simply moved the "previous question."

Mr. FRASER seconded Mr. Barrett's amendment. He wished to deliver himself from the imputation that he consented to lowering the standard of the educational examination. If a lad was examined to-day in arithmetic, three months later in algebra, and three months afterwards in geometry, did it follow that he was any the less qualified than a man who passed the whole three in one day?

Professor PENBERTHY: Yes.

Professor MCFADYEAN: Certainly.

Mr. FRASER said that, in his opinion, it was superior to an examination passed at one time. If the Council really did believe that examinations were of greater value when passed at one time, they should insist on the scientific examinations being passed at one time.

Mr. MULVEY asked whether the educational bodies mentioned in the schedule gave a single covering certificate, or did they grant more? If so, did the Council accept a number of certificates as covering all the subjects laid down, or did the Council demand one certificate?

The SECRETARY said he never accepted two certificates.

Mr. HUNTING: Has he ever had two offered to him?

The SECRETARY: No.

Mr. DOLLAR said that in his speech he did not wish to accuse any one certificate of being a debased certificate, or point out any other one which was exclusive, but he wished to bring before the Council the fact that the Council were bound by certain bye-laws which they themselves had made, and that they could not legally depart from those bye-laws.

Mr. KIDD supported Mr. Barrett's amendment. He said he was one of those who strenuously supported the higher standard of education, and from that he did not recede; but the Council had always tried to deal fairly with the students and with the schools. When the standard of the professional examination was raised, the Council gave a certain number of years to prepare the schools and the students. He thought the same thing should be done with the educational examination.

Mr. HUNTING said he should like to withdraw from seconding Sir Frederick Fitzwygram's motion. After what had been said, he intended to vote for Mr. Barrett's amendment.

No one seconding Sir Frederick Fitzwygram's amendment, it dropped.

Professor WILLIAMS withdrew his amendment in order to vote for Mr. Barrett's.

Professor MCFADYEAN asked whether Mr. Barrett's amendment, if carried, would enable a student who could not register as a medical student to register as a veterinary student.

Mr. BARRETT: No.

Professor MCFADYEAN said that did not dispose of the difficulty. He would withdraw his motion if he felt assured that the amendment by Mr. Barrett would not have the effect of lowering the standard of education.

Professor MCCALL said that Professor McFadyean had an advantage which no other veterinary school had, and he would never have had that advantage if the Medical Council had not been expunged. The matriculation examination took place at times to suit Professor McFadyean, the students were examined at his own institution, and he knew every man who went up for examination, and whether he had passed or not, immediately. In Scotland they were kept three weeks before they knew whether students were admitted. If Professor McFadyean wanted to do the right thing he should have no examinations held in his college.

Professor MCFADYEAN: Every one of those statements are wrong.

Professor MCCALL: They are not. Are the students examined in your college?

Professor MCFADYEAN: With that exception.

Professor MCCALL: Then I am right.

On Mr. Barrett's amendment being put, it was carried, eleven voting for and seven against; and on being put as a substantive motion, it was carried.

At the request of Professor MCFADYEAN, the names of those voting in the minority were taken down. They were Sir Frederick Fitzwygram, Professors Edgar, McFadyean, Penberthy, Messrs. Dollar, Mason, and Mulvey.

On the motion of Mr. HUNTING, it was resolved to telegraph the resolution to Mr. Rutherford in Scotland, with the addition of the words, "Accept certificates as before."

Notice of Motion.

Professor MCCALL gave notice that he would move, "That the educational examination of veterinary students shall not be conducted within the Veterinary College, but within the premises of the Institution granting such certificates."

A vote of thanks was passed to the President, and the Council adjourned.

WESTERN COUNTIES MEDICAL VETERINARY ASSOCIATION.

THE 22nd meeting of this Association was held at the Globe Hotel, Plymouth, on Thursday, October 17th, Mr. C. H. Golledge, Sherborne, occupying the chair. The members present were Messrs. W. H. Bloye, F. P. Collings, P. G. Bond, Plymouth ; W. Ascott, Bideford ; F. T. Harvey, St. Columb ; G. H. Elder, Taunton ; A. H. Oliver, Devonport ; G. H. Gibbings, Tavistock ; F. Clunes, and A. E. Michel, St. Austell ; J. P. Heath and W. B. Neelder, secretary, Exeter. Mr. Dunstan, St. Mellion, was present as a visitor.

Apologies for non-attendance were received from Messrs. Olver, Place, Penhale, Chase, and Howard.

The minutes of the last meeting were read and confirmed.

Nominations.

Mr. S. L. Stephens, Wadebridge, nominated by Mr. HARVEY, seconded by Mr. OLIVER.

Mr. Dunstan, St. Mellion, nominated by Mr. GIBBINGS, seconded by Mr. BOND.

Mr. Hutton, Barnstaple, nominated by Mr. ASCOTT, seconded by Mr. HEATH.

Some Abnormalities incidental to Parturition in the Mare and Cow.

BY G. H. GIBBINGS, TAVISTOCK.

When I acceded to the request of our President to bring forward a subject for your deliberation and discussion I experienced a difficulty in selecting one to comply with the usual requirements, that is to be generally interesting and calculated to prove materially instructive. I anticipate the consideration of some of the abnormalities incidental to parturition will accord with these demands.

I disclaim all idea of originality, and my remarks will only embrace such cases as have fallen under my own personal observation.

The practice of veterinary obstetrics entails an intimate acquaintance with both the "art and science" of our vocation, "Art" to be an adept in manipulative dexterity, and scientific knowledge to combat the complications with which we are frequently confronted in a serious case. Only a very slight smattering of this subject can be acquired at our schools—no number of lectures, or even demonstrations from models, will render a student proficient in this complex branch of the profession ; consequently if he has not had the good fortune to become conversant with this class of practice prior to his collegiate days, the knowlege has to be acquired after graduating, possibly in open competition with the experienced empiric, and it may be at the expense of his own reputation.

I will not weary you with a detailed account of the anatomy and physiology of the generative organs ; it will be sufficient for my purpose just to mention that a difference exists in the disposition of the uterus in the cow and mare. In the former animal the concave surface of the cornua looks downwards towards the floor of the abdomen, whereas in the mare the opposite condition—to the lumbar region obtains.

In alluding to the abnormalities incidental to parturition it will be necessary to consider them in relation to the nature of the impediment or resistance *i.e.* whether maternal or fœtal.

Maternal Dystokia.

Abnormalities in connection with the pelvic bones.—Alterations in the dimensions of the pelvis from congenital malformation are not so frequent in our patients as in the human female. Occasionally I have observed in young lean heifers that the fœtus attains larger dimensions than the pelvis can

accommodate, delivery then is difficult; the calf sometimes divides, the hind quarters being retained, these must be either removed piece-meal or pushed back and extracted by the breech. In such cases I have witnessed instances where forcible extraction has produced irreparable mischief to the cow.

Accidental deformity arising from fractures and ossific deposits must also be mentioned as barriers to parturition; the latter I have noted as a prominent ridge at the symphysis, the calf was extracted after much labour, but the cow ultimately succumbed to the injuries inflicted. Animals that have sustained fractures implicating the neck of ilium so as to cause permanent lameness are sometimes bred from with safety, but I do not consider they should be used for that purpose.

Stricture of the Vagina.—In connection with the vagina of the cow one occasionally encounters a tight ligamentous band, the remains of the hymen. In one animal I attended, although the presentation was normal, I could not effect delivery until this fibrous structure had been divided by two lateral incisions.

Tumours implicating the vagina or adjacent organs sometimes obstruct the passage of the fœtus. Recently I was requested to visit a cow reported to be straining severely; the animal had lately aborted; urine voided at short intervals and in small quantity. On exploring the genital canal I detected a large growth in the bladder. The dimensions of this organ were increased to such an extent as nearly to occlude the lumen of the vagina.

Spasm or Rigidity of the Cervix Uteri.—I have never met with this condition in the mare. If not due to pathological alteration in the muscular stricture this affection is not serious, but the difficulty (except in pronounced cases) is to differentiate between this so-called functional disease and scirrhous, or induration of the cervix. I have never seen beneficial results follow the local application of the extract of belladonna. Mechanical dilatation has been successful; repeated and gradual expansion of the operator's hand will sometimes cause relaxation. It is not advisable to resort at once to surgical interference, but if after the lapse of forty-eight hours the os was not more dilated I should not hesitate to incise it.

Torsion of Uterus.—The general conformation of the cow's uterus predisposes her to displacement of that organ. Complete torsion of the viscus I have never encountered, but partial torsion is comparatively common. I shall briefly enumerate the predominant symptoms:—Labour pains are in abeyance or simulate the character of ordinary colic; the cow frequently backs; relaxation of pelvic ligaments, but no corresponding tumefaction of the external genitals; the vulva is rather puckered and retracted; no water bag visible. Exploration of the vagina reveals a series of spiral folds converging towards the floor of the canal; if the os can be penetrated by the fingers it is in a corkscrew manner, deviating either to the right or left; the pains rather constrict than dilate the os; the impediment to the circulation induces turgescence of the vaginal vessels.

Within the last six months I have encountered three cases of partial twist in the cow. At first I rather ridiculed the *rolling* treatment, as recommended by Dr. Fleming, but in these instances that method of procedure was successfully adopted. It may be necessary to execute three or four complete rotations before the uterus regains its normal position, but when this is accomplished the folds of the vagina are effaced, the os gradually dilates, and, given time, the fœtus would probably be spontaneously expelled.

Hernia of the Uterus (*Ventral*).—If suddenly developed, as from traumatism, I consider this very serious in the mare. An enormous swelling appearing in front and to the right of the udder is frequently the first intimation

the owner notes of the mischief. When the mammary gland descends with the ruptured muscular tissue a diagnosis is easy, but this does not always obtain, the nature of the tumefaction being concealed by the immense œdema. As soon as this is absorbed the fœtus can be manipulated and the rent is evident. This altered position of the uterus usually protracts delivery; occasionally the os does not dilate: expulsion efforts are feeble, rendering early assistance essential to preserve the life of the progeny. The pendulous uterus should be elevated by a sack or bandage, if this is not sufficient the mare may be cast and placed on her back. I have observed after this complication the womb does not contract and the mare's life is imperilled through accumulation of septic material. Every particle of the placenta should be removed, the uterus thoroughly irrigated with an antiseptic solution, and support applied to the abdominal muscles.

Fœtal Dystokia.

Time will not permit of referring to the various diseases of the young creature that retard or protract delivery, neither shall I allude to those cases of dystokia comparatively easy of rectification, but only draw your attention to three mal-presentations constituting obstacles to parturition, viz., Anterior Presentation—Head and neck bent laterally; Transverse Presentation—The four legs presented; Breech Presentation—Hind legs completely extended under body.

Anterior Presentation.—Malposition of head. In this presentation, more particularly in the mare, the head is usually defective in conformation—a concavity on its inner surface resting on the convex ribs, and the nose approaching its flank. In a large mare this is a most serious complication, the length of the neck of the foal almost precludes the possibility of reaching the head, and even if this can be attained, attempts to straighten it often fail from rigidity of the neck. I have known instances in which the mare has been successfully delivered without re-adjusting the foal, and it is as well to employ discretionary traction prior to resorting to other means. The size of the calf's head prevents extraction by this method. Failing to adjust the head the other course to be adopted is embryotomy. Difference of opinion prevails as to which limb should be amputated. The one selected should be drawn out and skinned as far up as circumstances permit. Disjoint the leg at the pastern, leaving the foot attached to skin; this should be held tightly by an assistant. Introduce the left hand into the vagina (to prevent penetration of the skin) and with the right insert the instrument. This should be pushed in all directions till the skin is separated and the pectoral muscles divided. Adjust ropes to leg and employ traction with pulleys till complete evulsion of the limb occurs, leaving the skin intact. If the position of the head cannot now be rectified, the other limb must be removed. Material assistance may be rendered by casting the animal and altering her position by turning or placing on back. If hooks cannot be inserted in the orbits, a rope may be passed around neck and assistance afforded by gently pulling on the skin of the amputated limbs. I had to attend a cart-mare, seventeen hands high, some time since with this abnormality. The fore-legs were amputated in the manner described, but after four hours' fatiguing labour I had the sorry satisfaction of seeing the poor animal expire under my hands.

Transverse Presentation.—All four legs engaged in passage. This is a common form of dystokia in the mare, the head of the foal generally being deviated laterally and concavo-convex. The posterior limbs should be secured and the fore amputated. Pressure should be then directed on sternum and the foal delivered by the breech. As a rule, these cases are not difficult to manage.

Breech Presentation.—Hind limbs completely extended under body, tail and

buttock presented. Of all the forms of fœtal dystokia in the mare I consider this the most serious the veterinary obstetrist encounters. The length of the foal's limbs in animals of the larger type renders backward extension almost impossible, especially when nothing can be manipulated but the buttock and tail. An endeavour should be made to place the fœtus in a more favourable position by casting the mare and elevating her hind quarters. If the point of calcis can now be reached the double hook should be inserted in skin. Pull steadily so that cords may be adjusted around the limb, at the same time pressure should be directed on breech by crutch. Should these attempts to turn the limbs prove futile, delivery may be effeeted by division of the gastronemic tendons. If this, too, is unsuccessful, the only other procedure to adopt is embryotomy. The hind limbs should be disarticulated either at the hocks or hip-joints. I must confess I have never accomplished this task. If a suitable saw could be procured these mal-presentations would not, in my opinion, be such insurmountable barriers to the obstetrist. It is seldom one fails to manipulate the hocks, an instrument of this description could be then introduced around the anterior of leg, by this means it could be removed, and the foals extracted by hooks adjusted to stumps.

If no important advance can be recorded in that branch of veterinary obstetrics relating to the rectification of mal-presentations on account of imperfect instruments and other difficulties over which we have no control, the adoption of the general principles of anti-septicism has enabled us to prevent these serious complications which formerly proved so difficult to combat.

Although diseases consecutive to parturition do not come within the province of my paper, I shall briefly allude to retention of the fœtal membranes in the mare. In these animals the placenta is usually expelled within an hour from foaling. I am emphatically of opinion that, if not spontaneously discharged within twelve hours from the time of birth, the fœtal membranes should in all cases be artificially removed. Decomposition proceeds very rapidly in the mare's womb, and she is so susceptible to absorption of putrid material that the early removal of every particle of the placenta is imperative. This is not sufficient ; the uterus should also be thoroughly irrigated with an antiseptic solution, and for this operation Reid's stomach pump answers admirably. In all cases where extraneous aid has been employed, even if the after-birth is expelled, I adopt this precaution, and I am so persuaded of its efficacy as a prophylactic measure that if I failed to carry it into execution and any untoward results supervened, I should consider myself guilty of gross and culpable negligence.

I fear I have trespassed too long on your patience, but I trust you will remember I do not pose before you as an instructor, but rather as one desirous of and anticipating information. Only general outlines have been recorded, technicalities and details I have avoided. The alleviation or mitigation of the pain and sufferings of the lower animals is a solemn responsibility, we are under obligations not only to patients and employes but also to Him who has placed man in the supremacy. It behoves us, therefore, to adopt every available means of obtaining knowledge, to disseminate what we already possess, and thus each individual do his share for the advancement and honour of the profession to which he belongs.

A very good discussion followed the reading of the paper in which the President, Messrs. Elder, Heath, Ascott, Oliver, Collings, Bloye, Harvey, and Bond took part.

Hearty votes of thanks were accorded the essayist, after which the members dined together.

W. B. Nelder, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE autumn quarterly meeting of the Association was held at the Queen's Hotel, Leeds, on Friday, the 25th of October. Mr. James Cooke, of Scarborough (president), was in the chair, and there was a large attendance, including: Messrs. J. M. Axe, Doncaster; M. Robinson, Barnsley; J. Clarkson, Garforth; J. S. Scriven, Tadcaster; P. Deighton, Selby; Frank Somers, G. Bowman, A. W. Mason, S. Wharam, H. G. Bowes, G. H. Simpson, W. F. Greenhalgh, and A. McCarmick, Leeds; G. Pickering, Scarboro'; S. Chambers, Kirkeaton; F. W. Thompson, Harrogate; G. Whitehead, Batley; J. C. Collings, Otley; F. W. Clough, Morley; J. Atcherley, Harrogate; H. Snarry, York; J. S. Carter, Bradford. The visitors present were: Messrs. Charles Steel, A.V.D., Dublin; A. J. Lane, Leeds; A. J. Moffett, Otley; D. Dudgeon, jnr., Sunderland.

The Compulsory Notification of Diseases.

A number of communications were brought under the notice of the meeting by the President and the Hon. Secretary (Mr. Frank Somers). One was a circular from the Council of the Royal College of Veterinary Surgeons in regard to the letter of the Board of Agriculture, asking whether there would be any objection to the veterinary profession being placed with regard to contagious diseases of animals in a similar position to that occupied by the medical profession under the Infectious Diseases (Notification) Act, 1889, it being understood, as in that case, that a small fee would be paid for the notification of the disease.

Mr. HERBERT POLLARD (Wakefield), who was unable to attend, wrote that he was distinctly opposed to any order like the one suggested. He says:—"In the first place, our clients employ us confidentially. If we can persuade them to report any disease, all right; but I think we have no right to abuse this confidence. My second objection is the 'small fee' that is suggested. We want no more small fees; we have already done so much, as a profession, that general practice is almost a thing of the past. Let us, at any rate, keep the fees up as long as we can. If the Association pass a resolution in favour of supporting a notification order, I shall, of course, have to support it."

The PRESIDENT said the subject required careful consideration and discussion. No doubt, on first reading the circular, many veterinary surgeons might think that it would be a benefit to their profession to have compulsory notification of the existence of any contagious diseases, but the question wanted to be thoroughly threshed out. He believed that the Infectious Diseases (Notification) Act had been the cause of much dissatisfaction and disagreement in the medical profession. It was a well known fact that infectious diseases, in their early stages, were frequently sources of infection, and it would be necessary to report those cases as soon as possible, if the proposed notification order were to be carried out satisfactorily. But many of these diseases, in their early stages, did not show symptoms sufficiently diagnostic to make them certain that they had a typical case to deal with. Under the proposed act they would run the risk of incurring a penalty if they did not report such cases. An inspector would be sent down, and if he were an unprincipled man, or a man who would like to score a point over a practitioner, he would have the opportunity of doing so. If the Board of Agriculture specially appointed veterinary inspectors who did not follow the duties of a practitioner, or if every practitioner was able to undertake the duties of an inspector and to attend to the notifying of diseases in connection with the stock of his own client, then the thing would be different, and the act would probably be a benefit both to the veterinary medical profession and the public. He thought that, in the first place, they should consider their own position as a professional body, and secondly, the public. Only fourteen days was

allowed for a reply to the circular of the council of the Royal College, and therefore there was little time for consideration of the matter outside. He asked for the opinion of the meeting which should be communicated to the Council. He thought they ought to try to bring some pressure to bear upon the Board of Agriculture with the view of obtaining a point or two in favour of the veterinary medical profession. There was, for example, the question of qualified registered practitioners holding positions as inspectors. In his opening address as president of the Yorkshire Association last January he gave expression to the idea that every man should be able to discharge the duties of inspector in his own cases, and brought forward what he considered justifiable reasons for advocating it. Subsequently, a writer in *The Veterinary Record* controverted the proposal, arguing that every veterinary surgeon was not competent to act as a veterinary inspector. Such an argument would equally apply to the inspectors; they had all sorts of men as inspectors.

Mr. A. W. Mason said the question had been rather sprung upon them, and only a short time was given them in which to reply. As to his own attitude about the present time, he need hardly tell them how he should reply to the circular from the Royal College—that he did not care for compulsory notification as suggested by the Board of Agriculture. At the same time he confessed to the belief that eventually the Government would compel them under a penalty or fine to notify the existence of any contagious disease of which they were cognisant, in the same way as laymen had to report cases of swine fever, pleuro-pneumonia, and glanders. He had wavered somewhat in his own mind as to how he should act, whether it would not perhaps be the best to agree with the Board of Agriculture and accept what would inevitably come, or, as the president suggested, whether the proposal did not afford a good opportunity for the veterinary profession to ask something of the Board of Agriculture for doing what was desired of them. They might perhaps say to the Government: "If we are willing to notify the existence of contagious diseases what compensation are you going to give to a body of professional men whom you recognise as likely to be of some use to the British public?"

Mr. J. Clarkson remarked that when he read the circular he resolved in his own mind that his reply should be that he was against compulsory notification as suggested. He quite agreed with the President and Mr. Mason that it was a matter which should not be passed over lightly. In the event of the adoption of such an order they would be liable to a penalty or fine for not notifying a case which came under their notice. Another important consideration was whether the order was to be of a national character or only left to the local authority to carry out. If one district decided to put the order in operation, and another district decided not, he quite conceived that difficulties would arise. Hitherto the Government had almost ignored them as a profession, and had treated them very badly. In the first place, he thought they should look to the stockowner who called them in, and next consider themselves. In regard to the Infectious Diseases (Notification) Act, where that measure was in operation there was a recognised medical officer of health. But to whom would they notify under the Contagious Diseases (Animals) Act? Personally, he should object to the notifying to the local policeman, or any person of that class. Unless the present system of inspection was altered, the suggested order would not be of very much good. There was now too great a delay. The present was, as had already been pointed out, a good opportunity of trying to gain something for the profession. If the Board of Agriculture would recognise them as a profession, and ask the profession to assist them in the matter, he thought it would result in benefit to the country at large.

Mr. WHITEHEAD directed attention to an article by Professor Williams, who said the subject required considerable discussion. He (Mr. Whitehead) apprehended that the order, like the dog-muzzling regulation, would be left to the local authority.

Mr. G. PICKERING said if the Board of Agriculture would acknowledge them as a profession, and make the order general and independent of the local authorities, they might accept it; otherwise they could not.

The HON. SECRETARY intimated that he was not in favour of the order. The Board of Agriculture, he added, had not assisted them. During the last six months they had been at loggerheads with the authority on the question of appointments.

Mr. THOMPSON (Harrogate) thought they ought to look at the matter from the view that the good of the country was greater than the good of a closed profession theoretically. Under suitable conditions compulsory notification would be beneficial. One of those conditions was that they should not have to report to the local police-officer, and another was that the final decision as to whether their diagnosis was correct or not should not lay with a local practitioner, but with an officer from headquarters.

Mr. CLARKSON: And that the order or Act should be general?

Mr. THOMPSON: Certainly.

The HON. TREASURER (Mr. J. Scriven, of Tadcaster) said he should be in favour of compulsory notification if it were made general, but he could not sign the document which had been sent to him affirmatively, in the absence of full information. As a matter of inquiry, he should like to know whether, as in the case of an outbreak of swine fever, an inspector would be sent down from London and the matter taken out of their hands entirely.

Mr. G. E. BOWMAN would not agree to the proposal, so far as he understood it.

Mr. MASON repeated that he believed ultimately a compulsory notification order would come upon them, and said that what he objected to personally was the evasive character of the letter. It afforded them little or no information as to what the Board of Agriculture required of them, or what good was likely to accrue to them or to the British public by the adoption of a compulsory Act.

Mr. CLARKSON then proposed—"That the Yorkshire Veterinary Medical Association as a body object to a compulsory notification order, as suggested by the Board of Agriculture, without further data on which to form an opinion."

Mr. MASON seconded, and the resolution was carried with only two dissentients in a largely-attended meeting.

The Extirpation of Tuberculosis.

The Scottish Metropolitan Veterinary Medical Society invoked the co-operation and support of the Association as well as kindred societies, for the adoption of measures whereby bovine tuberculosis in this country might be checked and ultimately extirpated. A copy of the communication addressed to the Council of the Royal College on the subject was read.

The PRESIDENT reminded the meeting that the subject of tuberculosis, and the inspection of dairies, had been discussed at previous meetings of the Association.

Mr. MASON also recalled the fact that the Council of the Royal College had formed a special committee, of which he was a member, to consider the question, and said it would meet in London on the following day. He invited an expression of opinion on the subject which, he pointed out, needed careful consideration. He knew that for some years past it had been the feeling of the Yorkshire Association that tuberculosis should be scheduled

in the Contagious Diseases (Animals) Act, but the point was how far they should go. It was an important consideration how, after the disease had once been scheduled, the Government would deal with the cases. A few minutes ago the meeting would not join with the Government in reporting contagious diseases, and it was now proposed to schedule another disease.

Mr. CLARKSON: We object to the method.

Mr. MASON: Yes, nevertheless it is the thin edge of the wedge. Here, perhaps, we can point out the method in which we should like it done.

Mr. S. CHAMBERS (Kirkheaton) moved that they should give their support to the Scottish Metropolitan Veterinary Society.

Mr. CLOUGH (Morley) seconded, remarking that it was high time tuberculosis was scheduled in the Contagious Diseases (Animals) Act. There were numerous cattle in the neighbourhood of large towns whose milk was not fit to be drunk. It was something shameful.

The HON. SECRETARY also supported, suggesting that the owners of slaughtered stock should be compensated out of Imperial funds. He, too, thought that tuberculosis ought to have been scheduled years ago. He strongly deprecated the sale of tubercular milk which now took place in large towns. Quite recently he saw a cow in which tuberculosis was far advanced, and the animal's milk was afterwards mixed with the yield of healthy cows for sale in the lower parts of Leeds. Tubercular milk was, to his knowledge, sold in Leeds, and if such milk was not thoroughly boiled it would be liable to communicate consumption.

Mr. J. M. AXE said that in his neighbourhood of Doncaster there were several animals suffering from tuberculosis, and the milk from those animals was, he knew, very dangerous. He thought that all dairies should be under the supervision of veterinary surgeons, and that in cases of suspicion a proper test should be made.

The resolution was carried unanimously.

New Member.

On the motion of Mr. BOWMAN, and seconded by the TREASURER, Mr. James Brand, Leeds, was elected a member of the Association.

Appointment of Officers.

The PRESIDENT proposed Mr. Clarkson as his successor, and this was seconded by Mr. PICKERING, and supported by Mr. Bowman and Mr. J. M. Axe. Mr. Bowman observed that Mr. Clarkson would make an excellent President, and would do honour to the position.

The resolution was adopted unanimously, and Mr. Clarkson, in acknowledging his election, said he would try and do his best in the honourable position to which he had been unexpectedly called.

The following gentlemen were elected vice-presidents: Mr. Cooke (the retiring president), Mr. Whitehead, and Mr. Greenhalgh.

Mr. BOWMAN proposed a hearty vote of thanks to the hon, secretary (Mr. Frank Somers) and proposed his re-election, believing they could not have a better gentleman for the position than Mr. Somers.

The resolution was cordially seconded by Mr. Axe, and supported by Mr. Mason, Mr. Scriven, and Mr. Thompson, and unanimously agreed to.

On the motion of Mr. MASON, and supported by several members, Mr. Scriven was unanimously again appointed as hon. treasurer, and heartily thanked for his past efficient services.

Mr. SOMERS and Mr. SCRIVEN replied, and thanked the members for re-electing them.

The two auditors, Mr. Mason and Mr. Pollard, were re-appointed.

Mr. MASON next proposed a hearty vote of thanks to the retiring president, to whom, he said, they were greatly indebted. He had filled the office with grace and dignity, and the association had benefited from his presidency. They also wished again to thank him for the hospitality he showed to the members on the occasion of the meeting of the association at Scarborough.

Mr. GREENHALGH, in seconding, said that Mr. Cooke had shown great ability in the year of his presidency.

The PRESIDENT replied, expressing his sense of the kind assistance of Mr. Mason, the hon. secretary, and the hon. treasurer during the year, and for the way in which he had been supported by the members at the periodical meetings of the association.

Interesting Exhibits.

Some time was afterwards spent in examining specimens brought by members. Mr. Axe showed an excellent dissection of the nerves and blood-vessels of the neck and head of a horse, which was taken to the College when he was a pupil, many years ago. The animal, which belonged to a London brewery company, suffered from rupture, and it died. He had been offered by Professor Axe £25 for the specimen for the museum, but declined to part with it. Perhaps when he died he might leave it to the museum.

Mr. COLLINGS (Otley) showed a somewhat interesting brain tumour. He explained that about eighteen months ago he was called to the West Riding Asylum at Menstone to examine a bull, about nine months old. There were no unusual symptoms, except that the animal frequently raised its head. His diagnosis showed that the brain was being invaded on the left cerebral hemisphere. So remarkable was the tumour that the brain was kept by the asylum authorities, by whose permission he now exhibited it. The sire of the bull was a very excitable animal, and another of his progeny, a bull, when a year old, died suddenly—that was to say, in about five minutes.

Mr. WHITEHEAD took the members to an adjoining stable to examine a yearling filly by a celebrated hackney sire which was suffering from a singular disease on the face.

A short case was reported by Mr. Wharam, Leeds, relating to a puncture in the bowels in flatulent colic, and Mr. Deighton also exhibited a specimen that excited more or less curiosity.

The different exhibitors were warmly thanked, on the proposition of the President.

A Review of Veterinary Science.

Mr. G. PICKERING (Scarboro') read a paper on "Some Subjects of Interest to the Veterinary Profession." As to education he said he thought a member of their profession ought to be as well educated as members of the medical and legal professions. A man might make a good doctor or lawyer but not be at all suitable for a veterinary surgeon. More than gentlemanly manners and education were needed. A man must be naturally adapted for veterinary work and have a liking for it; otherwise he would never do any good. As the restrictions were now greater for the admission of students into the colleges, they should certainly have fewer men entering their ranks. A healthy competition did no harm, but they were already beginning to feel the effects of overcrowding. And nothing was more injurious to a profession, as the medical and other professions were finding out to their cost. With regard to pupils he thought that every young man who intended to enter the profession, and it was no good unless he could pass the matriculation, ought to go for a certain time to a good veterinary practitioner who had a mixed practice. That practitioner would be able to tell whether he was a suitable man or not for the profession he had chosen. When a young man had got his

diploma he began to think about the best way to make his living. Some became improvers, some assistants, and others who had had some practical experience would commence practice on their own account. This they would find very difficult work, and unless they had private means to keep going until they got known and established, they would find it cheaper and better to go into a practice where the veterinary surgeon is thinking of retiring or wished to take a partner. Having indicated the varied and more important work of a veterinary surgeon, Mr. Pickering expressed the opinion that the best appointment a man could get, if he were suitable, was in the service. But they must not run away with the idea that anyone who had got his diploma could get into the Army. In the Army it was all the better if a man had a little private income, although there were many who lived on their pay. They were glad that great improvements had been made in the Army Veterinary Department during the last few years. Proceeding, he said they ought to have properly qualified veterinary surgeons as district inspectors. It was a slight on their profession when unqualified men were appointed to these positions, but he had no doubt that in time the public would appreciate more fully the valuable services of the profession, and realise that veterinary surgeons would make better inspectors than unqualified men. The sooner they had public slaughterhouses the better, and all meat and animals should be inspected by qualified veterinary surgeons. He believed the country practitioner had suffered more from the so-called veterinary chemist than from all the empirics. Why these people were allowed to use the term "veterinary," he did not know. Could they use the word "chemist" if they opened a shop for the sale of veterinary medicines? Speaking of the evidence of veterinary surgeons in courts of law, he said he did not think that anything more than this had brought the name of the veterinary surgeon into bad repute, and often made it the laughing stock of the public. As to a remedy, would it not be much better, he asked, to settle these cases by arbitration, instead of going into court, and call in a well-known practical and experienced man, who could be relied on? As members of a noble profession, they ought to uphold the R.S.P.C.A. as a prevention of cruelty society, but not as a prosecuting society. They should never perform unnecessary operations or operate for the sake of experiment. And all operations should be performed so as to cause their "patients" as little pain as possible. He concluded by giving a number of practical hints with regard to the treatment and examination of horses, and was thanked for his paper, which, it was understood, would be discussed at a future meeting.

At the conclusion of the proceedings, those who had attended the gathering were entertained to tea by the Leeds members of the association. The hospitality thus shown was recognised in a vote of thanks moved by Mr. Cooke, and heartily adopted.

Mr. MASON, on behalf of the Leeds members, suitably acknowledged the compliment.

FRANK SOMERS, *Hon. Sec.*

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

A MEETING was held at the Albion Hotel, Lincoln, on Thursday, November 7th. Present: Mr. T. A. Rudkin (Grantham), president, in the chair; Messrs. W. H. Brooks, Leadenham; W. G. B. Dickinson, Boston; R. T. Hardy, Sleaford; C. Hartley, H. Howse, C. Seely, Lincoln; J. Mackinder, Peterboro'; J. A. Robinson, (Hon. Sec.), Market Deeping; Jas. Smith, Huntingdon; and Captain Russell (Hon. Treas.), Grantham.

The minutes as published in the veterinary journals having been taken as read, letters of apology for non-attendance were read from Professors

Penberthy, Pritchard, Williams, W. O. Williams, and Messrs. Clarke, Freer, Gooch, Kidd, Reeks, and T. E. Smith.

The SECRETARY read the following letter from Mrs. Goodall in reply to the vote of condolence sent from the last meeting of the Association.

Melton Mowbray, *July 10th*, 1895.

Dear Sir,—Will you kindly convey my grateful thanks to the members of the Lincolnshire Veterinary Medical Association for their kind expression of sympathy with me in my great sorrow. My dear husband was always anxious to do his best for the profession he loved so much, and he often spoke of the medical meetings as most enjoyable and happy times.—I remain, yours very sincerely,

MARY GOODALL.

To J. A. Robinson, Esq.

Bovine Tuberculosis.

The circular letter from the Scottish Metropolitan Veterinary Medical Society was read.

Captain RUSSELL said that he thought the Scottish Association had been a little hasty in their proceedings in forwarding this petition to the Royal College of Veterinary Surgeons before consulting the other veterinary associations in the country. He thought they would make a mistake to include tuberculosis in the list under the Contagious Diseases (Animals) Act. If they went on, as they had been going on for the last 20 years, veterinary surgeons would not be required at all except as advisers, for they were handing all these cases over to the butcher, and the arrangements now in practice for putting down swine fever would probably be used in tuberculosis. Those who travelled about the country would use tuberculin which the veterinary surgeons should use, and the butcher would use the pole-axe. He felt if it were not for the ailments of horses which were of considerable value, that they would have difficulty in living at all. He moved that the Board of Agriculture be not solicited to take this question under consideration at present.

Mr. HARTLEY said he would perhaps not go quite so far as that. He did not think the Government would take it up, nor did he think that agriculture could stand it. The profession was not strong enough to deal with it. He thought the Scottish Association should have taken the feelings of the veterinary societies throughout the kingdom before taking the course they had. The agricultural community would bring as much pressure to bear as possible upon their representatives to make a common stand against it.

Mr. HOWSE did not see where the money was to come from to recompense them.

Mr. DICKINSON thated that it was not thoroughly proved that tuberculosis was transmissible from the food or milk.

Mr. HARTLEY said he did not think it was hereditary but it was contagious, and it would require a great amount of courage for the veterinary surgeon to go among his clients with tuberculin. He thought it was a Quixotic idea at present.

Mr. ROBINSON said they had very little of tuberculosis in the district in which he lived, and he did not think that in Lincolnshire, at any rate, it was a question of great urgency; he thought there could be no doubt that it was a very contagious disease, especially where kept thickly together in ill-ventilated places. Perhaps the best thing he could do would be to write to the Scottish Metropolitan Society stating that this Association did not consider the time ripe for action in the matter.

Mr. MACKINDER said the general opinion of the British Medical Association when they met at Cambridge was that tuberculosis in the human subject was a contagious disease and was communicable by milk.

Captain RUSSELL said he thought it would not be sufficient to send a letter to the Scottish Society alone. After the attacks that had been made on a professor, the least they could do was to send a letter to the R.C.V.S. expressing their views on the matter. He therefore suggested that they send a letter to the Secretary of the Scottish Veterinary Medical Association, and also to the Council, recommending that no action be taken in the matter at present. He also thought the other veterinary medical associations should give expressions to their views on the subject.

Mr. HARDY seconded the resolution, and it was adopted.

Compulsory Notification.

The question of compulsory notification was then mentioned, but it was decided to adjourn the consideration of it to a future meeting.

Presidential Address.

BY T. A. RUDKIN, M.R.C.V.S., GRANTHAM.

Gentlemen.—My first duty is to thank you very much for the honour you have conferred upon me by making me your president. It is an honour which I hardly thought of aspiring to when I first joined the Lincolnshire Veterinary Medical Association, knowing how many more capable members there were better able to fill the presidential chair, but believe me I have always the best interests of our Association and profession at heart, and if I can do anything in my small way to further the interests of either I shall feel only too delighted at the expiration of my term of office. I do not intend to try your patience by a lengthy address. I know it is usual on an occasion like this to take a cursory glance at all that is going on at the present time in our profession. To do that I need only refer you to the various veterinary periodicals.

I know you are all heartily sick of the question of the Board of Agriculture, and I think I might quote the words of the Irishman when he clipped the pig, and say there has been a tremendous lot of noise and precious little work up to now. I think we as a profession should put our foot down and refuse to work under a lot of aristocratic pensioners and policemen. I have no doubt you have all received a circular from the Royal College of Veterinary Surgeons, *re* the Notification (Animals) Act. For my own part I think the Act is unnecessary, and not likely to benefit the veterinary profession. Under existing circumstances there is so much red tape in the working of the Board of Agriculture that it is a perfect nuisance for veterinary surgeons to be in any way connected with them, and I think this Act if passed will only tend to confuse matters.

Since our last meeting one of the greatest scientists of the day, and I think I might say the greatest, has passed over to the great majority; I refer to Mons. Pasteur. He has by his diligent study and research done more for the study of bacteriology and for the benefit of suffering humanity than any man up to the present day, and I have no doubt his name will be looked up to and honoured for generations to come.

I think we can congratulate ourselves as an association, and I hope in a large county like this we shall keep steadily increasing in numbers. I am sure every veterinary surgeon can learn something at the meetings of our various societies, and some by their kindly help and advice may often push on a young and struggling practitioner. I wish we as individuals could say we were all flourishing. Undoubtedly times are very serious for agricultural practitioners. No class of men in their prosperity stuck better to the veterinary surgeon than the farmers. I am sure we as a profession have done all in our power to value the confidence they have placed in us by persuading

them as far as possible to breed from sound stock, and helping them to, as far as possible, avoid the infectious and contagious diseases. I could not help smiling a few weeks ago when I read the remarks of one of the members of our profession. I think he said that no veterinary surgeons ought to keep a forge, nor go in for horse dealing, livery stable keeping, &c., but he might with impunity farm and act as a veterinary surgeon. Poor veterinary surgeon! You can, as recommended, first go as a pupil for two years, then go to College for four years, and then if you are a smart young fellow and have a certain amount of luck, perhaps you may get a berth as assistant at £50 per year and find yourself. Under our existing rules and regulations I must say that I think our lot is not a happy one. I trust that there may be a good time coming for us all.

Grunting and Unsoundness.

Mr. H. Howse, according to notice, opened a discussion on "Grunting and its bearing upon Unsoundness." He said:—Gentlemen,—I am requested to again bring before your notice the subject of "Grunting in Horses." You will remember that at the last meeting held at Peterborough the subject was submitted for your opinion and discussion, owing to the sale of a highish priced hunter at Messrs. Tattersall's last June. The horse was a "pronounced grunter" both when galloped and when threatened against the wall, was rejected by me as a "grunter" and unsound, and was returned to Messrs. Tattersall. These gentlemen took the opinion of two eminent practitioners in London who gave certificates of soundness. The buyer retained the horse rather than incur the expense of a lawsuit. Messrs. Tattersall, in a letter to the purchaser, said "that the question of soundness, or unsoundness, of a grunter ought to be definitely settled by the veterinary profession." Until then, I thought there could not be two opinions on the subject, but it seems there are. One of the examining gentlemen wrote to this effect "That it was of little importance that a horse should grunt so long as there was an absence of roaring or whistling." By the same kind of argument "cribbing" or being affected with "stringhalt" might also be considered "of little importance," so long as the horse was capable of doing his work and, continuing that line of argument, horses having spavins, curbs, or any other defects ought also to be regarded as sound so long as the defect—acknowledged to exist—did not interfere with the animal's usefulness.

But this argument is sophistical, fallacious, misleading and disappointing—such animals are termed "sound for practical purposes," but are technically "unsound"—unsound from a professional point of view. The two conditions essentially differ. An animal, after successfully passing the ordeal of examination for soundness possesses a standard degree of excellence, that not only enables him to perform the work his build and conformation fit him for, but has also an enhanced value in consequence of his degree of perfection; whilst another animal, being the subject of some defect, such as grunting, is by that defect removed from the degree of excellence required, and, commercially, does not command the same value in exchange for money. The point, therefore, is important, instead of being unimportant; and, so far as I can see, does not admit of two opinions. Sometimes too correct conclusions can unmistakably be arrived at, arguing from a negative point. It is related that a finicking fop in an hotel coffee-room was one day putting on so much unnecessary side, that his antics attracted the attention of the other occupants of the room. One, thinking audibly, muttered "puppy." The exquisite, on hearing the remark, immediately "reared up" and desired to know if the epithet "puppy," was meant to apply to him. The other man replied, "Yes, you are a puppy, and I'll prove it if you will answer me this question. When you micturate, do you elevate and abduct a hind leg?" "No," thundered the fop; "then," said

the questioner quietly, "all old dogs do." So with regard to the point in question, all sound horses perform every reasonable exertion without involuntarily "grunting." The question is now before you, and I trust unanimous conclusion will result from its debate.

Mr. C. HARTLEY said he was very pleased to hear Mr. Howse's remarks, in which he had brought the facts before them to try and get the opinion of the Association on this wearying and harassing topic. He did not think they would find many men who would not say that "grunting" was not a sign of legal unsoundness. He should like it to go forward in the strongest terms that grunting was unsoundness. He was certain in his own mind that he had always regarded an animal that grunted or groaned, he had always regarded that grunting was a form of unsoundness. There were lots of animals that grunted that were perfectly clear in their breathing, but that had nothing to do with it. It should be known that veterinary surgeons of Lincolnshire held that grunting was an unqualified unsoundness. He did not think that a horse should grunt unless there was some malformation of the air passages in the neighbourhood of the epiglottis, and he maintained that any man who gave a horse that grunted a certificate of soundness ran as great a risk as from spavin, &c.

Mr. MACKINDER agreed with the remarks made. He rejected a mare which grunted as unsound at an agricultural show, but a professor said there was nothing unsound about her, but he had never done a bit of work for the man to whom the mare belonged since. He had always rejected them as unsound if they grunted, and he always should.

Captain RUSSELL begged to endorse the remarks as regarded grunting. He would like to ask them one question. What was the definition of soundness? Sound meant perfect. Could a horse that grunted, that made a noise, be said to be perfect? That in itself was a sufficient answer to the question whether grunting was unsoundness or not. He had taken the trouble to make *post-mortem* examination of grunters, and he had found chronic disease of the lungs. He should never think of passing a horse as sound that grunted. He did not mean to say that a horse might not be practically sound which grunted, but he hoped that other associations would take the matter up, and that it might be definitely settled that a horse that grunted was not sound.

Mr. DICKINSON thought they should consider a differentiation in the grunt, though he agreed that a horse that grunted should not be passed as sound, and the man who passed a horse like that should render himself liable, because the man who bought him was not getting value for his money. As to what Captain Russell said about consolidation of the lungs or fluid on the chest, he took Captain Russell's word, but he had not seen it. He had seen in *post-mortem* examinations that animals suffered from intercostal rheumatism, and he had seen the same thing in horses that had suffered from pleurisy. A grunt was not a short sound, it was prolonged, and he should differentiate between these conditions and respiratory affections. It had been stated by Mr. Hartley that a horse did not grunt without obstruction of the air passages. A horse grunting from a laryngeal affection had a great chance of becoming a roarer or a whistler, and that from adhesion of the pleura. If they could decide as to which of these conditions existed, either the laryngeal or the pleuretic affection, they would be better able to decide as to the course to take. He remembered a horse grunting from fistulous withers; then there was the grunt of fear, and they should be able to differentiate between a grunt of fear and a grunt from an organic defect. He should never pass a horse sound that grunted, and never intended to do so.

Mr. HARDY differed from Mr. Hartley as to the increased respiration. He had heard two or three horses grunt with a stick, that when galloped, would

not make the slightest noise. A horse that grunted must be unsound, and he should never think of passing him.

Mr. DICKINSON cited a case of a horse that had been passed, and was afterwards rejected because he had had tracheotomy performed on him. There would be an excrescence on the trachea which would impede his respiration. The horse was not a whistler or a roarer, but the impediment caused an obstruction.

Mr. HARTLEY cited a case of a horse breathing better after its larynx had been rested by tracheotomy. The term grunting was unsatisfactory, and they ought to find a better word. As to the grunt of fear, if they rejected every horse that gave vent to a little expression of alarm, they would have to reject a good many.

The PRESIDENT said they were all agreed as one man that grunting was distinctly unsoundness, and he proposed that they, as a society, write to the other societies and say they had this discussion on at their meeting, and that it was the opinion of the Lincolnshire veterinary surgeons that a horse that grunted was unsound. They all knew there were nervous grunters, but there was a difference between that and a prolonged groan. He was surprised to hear that any member of the profession passed a horse absolutely sound that grunted. He found many young cart horses that grunted distinctly, and they were unsound. He moved that their Secretary be instructed to write accordingly.

Mr. HOWSE said it had been intimated by Messrs. Tattersall that the profession should come to some decision.

The PRESIDENT finally proposed, and Mr. HARTLEY seconded, that it is the unanimous opinion of the members of the Lincolnshire Veterinary Medical Association, assembed at Lincoln on November 7th, that the sound recognised as grunting in all horses, when subjected to veterinary examination, is distinct unsoundness, and that the Secretary be requested to convey this opinion to all the veterinary societies in the kingdom, with a view of eliciting their opinion thereon. Adopted unanimously.

The SECRETARY said he thought it was only their due to carry a hearty vote of thanks to Mr. Howse for the way in which he had dealt with the subject, which was of great interest to all of them, and he had very much pleasure in proposing a vote of thanks to Mr. Howse.

Mr. HARDY seconded, and the proposal having been adopted by acclamation, Mr. Howse said he was very much obliged to them, and he held that it was very important that a definite decision should be come to, so that there should be no doubt about passing a horse which was unsound. He hoped that something clear would be arrived at from communication with the other veterinary associations. He should like it adopted all over the country.

The Council of the Royal College of Veterinary Surgeons and Advertising.

In accordance with the notice on the agenda, Mr. Robinson then moved "That the proposed action of the Council in reference to advertising is in advance of the requirements of the profession."

A discussion ensued, in which most of the members present took part, and it was generally felt that as we were advancing so rapidly to the social position held by the medical, legal, dental, and other learned professions, it would be beneath the dignity of the Lincolnshire Veterinary Medical Association to take any steps to retard the progress of the veterinary profession in the direction of equality with the other professions.

Captain RUSSELL then proposed a vote of thanks to the President for his address and his conduct in the chair. This was seconded by Mr. Jas. Smith, and carried unanimously.

The members of the Association afterwards dined together, the usual loyal, patriotic, and professional toasts being duly honoured, and concluding a very successful meeting.

J. A. Robinson, *Hon. Sec.*

CONTAGIOUS DISEASES ANIMALS ACT, 1895.

Summary of Returns, for the four weeks ending 14th December, 1895.

England and Wales.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders and Farcy.	Rabies.	Foot-and-Mouth Disease.
None	*Slaughtered.* Diseased, 7,456 Died... 1,071 Suspected 170 Total 8,697	Fresh Outbreaks 19 Animals Attacked 194	Fresh Outbreaks 60 Animals Attacked 118	Dogs killed 35 Dogs died 6 Total 41	None

Scotland.

None	*Slaughtered.* Diseased 532 Died ... 78 Suspected 4 Total 614	Fresh Outbreaks 13 Animals Attacked 24	Fresh Outbreaks 2 Animals Attacked 7	None.	None

Ireland.

None	*Slaughtered.* Diseased 65 Died ... 39 Suspected 353 Total 457	None.	None	Dogs killed 31 Ass ,, 1 Cattle died 7 Ass died 1	None.

MICRO-ORGANIC LIFE AND PLANT GROWTH.

Among the many important results which have followed from the brilliant researches of Pasteur, none possesses greater interest for the agriculturist than the discovery of the important and beneficent *rôle* performed by micro-organic life in promoting plant growth. The functions which they perform in the soil of every farm are, as is being recognised more and more every day, of the very highest significance. Indeed, in all departments of farm work they are active ; and without their aid the farmer could make no progress in his arduous and difficult occupation. Their presence on the farm is as neces-

sary as the presence of larger live stock—cattle, sheep, pigs—for without their assistance the farmer could not only not grow his crops, but he could neither make butter nor cheese.

Recent bacteriological work has demonstrated that every ounce of soil is teeming with myriads of bacteria, whose work it is to conduce to the successful growth of the crops of the field by elaborating, in a variety of ways, the necessary food constituents which the soil supplies to the plant ; for the plant requires its food materials in a more or less simple form ere it is able to assimilate them. It is, then, by converting these more or less complex forms of food material in the soil into simpler ones that these minute workers in nature's economy are actively engaged. The soil, indeed, may be likened to a gigantic laboratory, in which the most varied operations are going on—those great chemical changes on which depend the continuity and welfare not only of vegetable but of animal life.

With regard to the number and nature of these very minute plants—as they may be called—since they approximate more to the plant kingdom than they do to the animal kingdom—we have as yet scant knowledge ; but with regard to their number some conception may be afforded by the statement that of one class alone a gram of soil—an amount little more than the one twenty-eighth part of an ounce—may contain over half a million. Although science has, up to the present, discovered more than 1,000 different species, it cannot be doubted that this is but the merest fraction of the total number of different micro-organisms which exist. We do not know how many of these 1,000 may inhabit the soil. It is highly probable, however, that the majority, if. indeed, not the entire number, may be soil-dwellers. We have as yet, however, only succeeded in identifying a few species of bacteria in the soil. We know something, however, of the products that they elaborate. A large section of the community of these soil-workers are concerned in dealing with the organic matter—of vegetable or animal origin—which is to be found in varying proportions in all fertile soils, by splitting it up into such simple compounds as water and carbonic acid gas. These organisms have been in the past popularly known as putrefactive organisms. They infest in huge numbers every heap of rotting organic matter, which they sooner or later cause to be gasified. Their function, we need scarcely point out, is a very important one ; as, were it not for their agency, the earth's surface would soon become so encumbered with the remains of dead vegetable and animal matter that life of all kinds would be rendered impossible by the interference with the great process of the circulation of matter. The carbonic acid, which is so important a source of plant-food in the air, and which is also the most valuable solvent of the mineral plant-food of the soil, is a product of the action of this large group of bacteria.

Other kinds of bacteria act upon the mineral matter of the soil. Some, for example, feed on iron compounds. But of all these bacteria, the most interesting yet discovered are those which deal with the elaboration of the nitrogenous matter. For a variety of reasons nitrogen is one of the most interesting of the elementary constituents of plant tissue, which contains it to the extent of one or two per cent. The amount does not seem to be great, yet so important a food is it, that no plants will grow where all sources of it are cut off. In most cases it may be said to be the determining factor in plant growth, which arises from the fact that it is apt to be less abundant than almost any other necessary plant food ; and it may be said that one of the important problems of modern farming is to see that every field, destined for use in arable culture, is properly supplied with this highly important soil ingredient. That it is essential for plant growth has long been recognised ; but no question in the whole range of plant physiology or agricultural chemistry has excited a wider amount of discussion, or has had devoted to it more

investigation than the question of whence and how do plants derive their nitrogen? As we have already indicated, the result of recent years' researches on the action of minute life in the soil, has thrown a good deal of light on this interesting problem.

Of possible sources of nitrogen to the plant, we have the air and the soil. The former, we know, contains nitrogen in very large quantities in the elemental form; indeed, some four-fifths or its entire bulk is made up of this gas. In the soil, on the other hand, it is present in what at first sight seems but trifling proportion, and not, as in the air, in an elemental form, but in a variety of combinations. It is in helping the plant to utilise both sources of nitrogen that the bacteria of the soil are effective.

It has been long known that the plant absorbed most of its nitrogen in the form of nitric acid. A strange fact about nitric acid is that if we search any soil with a view to detect its presence, we shall find that the amount it contains is very slight. Now, this is due to two causes. In the first place, on soils covered with vegetation, it is absorbed by the plants' roots almost as fast as it is formed. In the second place, where the amount is in excess of that required by the plant, or where the soil is bare of vegetation, the rain speedily washes this body out of the pores of the soil. Indeed, it is rather a striking fact that the latter should not have the power of retaining such an important and valuable plant food. Our wonder is increased when we remember that in respect of other plant foods, notably potash, a substance which is quite as soluble as nitric acid, the soil does possess a retentive power. At first sight, therefore, we are somewhat struck with the waste which nature seems to be guilty of in regard to this valuable substance. But a more careful investigation into the facts of the case will tend to correct this impression. No doubt, under certain conditions, a very considerable loss of nitrogen may take place in the soil. On the other hand, we must admire the admirable provision made for minimising this loss. This is to be found in the fact, as we have already indicated, that the soil never contains at any time more than very minute quantities of nitric acid, and that most of the nitrogen is present in it in a form which is not liable to be lost by drainage, and which is only slowly converted into nitric acid as the plant requires it.

It is well then for vegetation that nearly all the nitrogen in a soil is in certain organic forms, which are for the most part of an insoluble nature. A very minute amount is as ammonia, a form which, although equally soluble as nitric acid, is yet retained in the soil, and not liable to be washed away by the rain. Now, it has been long known that nitrogen in the form of organic compounds, and as ammonia, was liable, under suitable conditions, to be converted into nitric acid, and this knowledge was taken advantage of for manufacturing saltpetre, or potassic nitrate, which, as all are aware, is an important ingredient of gunpowder. The conditions necessary for this process were, in addition to abundance of nitrogenous matter, a certain degree of warmth and moisture, free access of air, and the presence of lime salts. Large heaps of mould, rich in nitrogen, mixed with decomposing animal matter and ashes, were erected in many parts of the world for the purpose of obtaining saltpetre, and were known under the name of "nitre beds," "nitraries," and "saltpetre plantations." So scarce was saltpetre for many years. and so important consequently was its manufacture, that special laws, known as "saltpetre laws," were enacted by the French Government for its regulation, and which remained in force till the time of the French Revolution.

But although the general conditions under which the process of *nitrification*, as it was known, took place, it was not till the year 1877 that it was discovered to be caused by the action of micro-organic life. It was only then that two French chemists, Schlœsing and Muntz, made this interest-

ing discovery in the course of some experiments on the purifying effect which the soil exerted on sewage matter. These investigators discovered that a soil after being treated with such an antiseptic as chloroform no longer possessed the power of causing the nitrification of the nitrogenous matter of the sewage. They inferred from this fact that the process was connected with micro-organic life. It may be here pointed out that nearly fifteen years before this the great Pasteur had predicted that the process of nitrification would be found to be probably connected with ferments.

At first it was only supposed that only one kind of micro-organism was implicated in the change, but subsequent research on the question has shown that several distinct kinds of bacteria are active. Two of these have already been isolated, and there is strong evidence to infer that a third species of bacteria is implicated in the process.

As we have seen, the organic nitrogen is by far the most abundant form of nitrogen in the soil. The first step which is effected, therefore, seems to be the conversion of nitrogen from this form into ammonia. What the exact nature of the bacteria which effect this change is we do not know, but those carrying on the process in its two subsequent stages have been isolated and studied. These subsequent stages are the conversion of ammonia into nitrous acid, and the conversion of nitrous acid into nitric acid. The former organism was the first to be discovered, has been named *nitrosomonas*, and has been described as consisting of "nearly spherical corpuscles, varying extremely in size. The largest of these corpuscles barely reaches a diameter of a thousandth of a millimetre; and some are so minute as to be hardly discernible in photographs, although shown there with a surface one million times greater than their own. The larger ones are frequently not strictly circular." The micro-organisms effecting the final stage of the process, viz., the conversion of nitrous into nitric acid, although isolated, are not so well known as the others. They have been called *nitro baeler*. A very striking fact with regard to both these kinds of bacteria is that they differ from all other hitherto discovered bacteria in refusing to develop in the ordinary cultivating media; indeed, in order to isolate them they have had to be cultivated on a special medium, composed entirely of mineral ingredients, viz., silica jelly mixed with certain other mineral substances. This fact is one of very great interest and importance for vegetable physiology, since it is subversive of what has hitherto been regarded as one of its fundamental laws, viz., that the power of deriving carbon from a mineral source is alone possessed by green-leaved plants.

With regard to the conditions most favourable for the development of this interesting process much has been discovered. In soils containing in abundance the elements of fertility, and the physical texture of which is such as to permit of a proper circulation of air, and possessed of a proper amount of moisture, this process will take place rapidly in summer weather. We say "in summer weather," because when the temperature approaches the freezing point the process entirely ceases; indeed some eight or ten degrees above freezing point the process develops most feebly. In this country we rarely have sufficient heat to produce its maximum development, which goes on about 100 degs. Fahr. These micro-organisms, it may be added, do not develop in a water-logged soil, or where any poisonous substance is present.

But not merely do bacteria help the plant to utilise the nitrogen present in the soil, they also help certain plants to utilise the nitrogen of the air. This discovery has solved a mystery which for many years has puzzled plant physiologists and agricultural chemists. If the roots of such plants as the pea, lupine, or clover be examined, certain wart-like excrescences will be found. It has been recently discovered that these excrescences are the homes

of vast numbers of bacteria which possess the power of fixing the free nitrogen of the air, and rendering it available for the plant's uses. The exact method in which this is done has not yet been clearly demonstrated, but there can be no doubt about the truth of the discovery, which serves to throw considerable light on the scientific principles underlying the rotation of crops, and to open up the prospect of new and improved methods of culture to the farmer.

CATTLE DISHORNING.

Making "Polled" Cattle.

BEFORE Sheriff Campbell Smith at Dundee recently, Harry Swan, farmer, Balhungie, parish of Monikie, was charged with three offences under the Prevention of Cruelty to Animals Act. The complaint set forth that (1) on 21st September at the farmsteading of Balhungie, he cruelly ill-treated, abused, or tortured 12 cattle belonging to him by sawing off not only the whole of their horns, but a considerable portion of their frontal bones or skulls, whereby they were subjected to great and unnecessary pain; (2) on 5th October, at Balhungie, he cruelly ill-treated 10 cattle belonging to him by sawing off not only the whole of their horns, but also a considerable portion of their frontal bones or skulls, whereby they were subjected to great and unnecessary suffering; and (3) on 30th September sent from Balhungie to the home farm of Tealing 12 of the cattle without having dressed or made provision for the protection of the animals' heads operated upon from the inclemency of the weather; in consequence of which suppuration took place in the wounds, and maggots were allowed to be formed therein, causing the animals intense and unnecessary suffering, resulting in the death of two of the cattle on 5th October, the enforced slaughter next day of two others, and serious injury to the health of the remaining eight. As an evidence of the interest which the case has evoked, there was a large attendance of the public in the Court, the majority of the spectators being agriculturists from the surrounding district, who followed the proceedings throughout with marked attention. Several prominent officials of the Society for the Prevention of Cruelty to Animals were also present. Accused tendered a plea of not guilty. The prosecution was conducted by Mr. Alexander Agnew, the Procurator-Fiscal, while Mr. W. B. Dickie, solicitor appeared for the defence.

Many witnesses for the prosecution and defence were examined, and after hearing the Fiscal and the Advocate for the defence, the Sheriff said the High Court of Justiciary, in interpreting the statute for the prevention of cruelty to animals, had decided that the operation of dishorning cattle, which consists in cutting off the horns as close to the skull as possible, and which causes considerable pain at the time, does not infer a contravention of the statute, the operation being performed skilfully and with as little pain as possible to the animals for the purpose of making the cattle more manageable in the feeding courts. That was the interpretation of the Act given for Scotland. There had been a different interpretation on the point given in England, but his Lordship was bound by the Scottish decision, even although in his opinion it was wrong, which he was not able to say it was. The question raised by the prosecution was whether the evidence in the case had established that there was a material difference between it and that case which had been disposed of by the High Court. The Fiscal had argued that there were differences in respect that part of the frontal bone was cut off, and that he had proved that the operation was not performed skilfully and

that it was not performed with as little pain as possible. As far as his Lordship could gather, the Haddington case was a case of close dishorning—as close to the skull as possible—just as much as the present case was close dishorning. The question was whether there was any difference proved. The evidence was practically to the effect that the dishorning performed by the accused was as close the skull as possible, that it took away part of the skull, and that the operation caused more pain than was necessary to the animal—that it was not "with as little pain as possible to the animal." The whole evidence against the accused, as to the operation causing unnecessary pain, consisted in assuming if the cut had not been as close to the skull as it was there would not have been so much pain. The decision of the High Court tolerated close dishorning, and what was tolerated as close dishorning was not of the kind which might be characterised as dishorning two or three inches away, or cutting the horn through the middle, but cutting the horn as close to the skull as possible. Between the facts in that case, and the facts in the present case, so far as the operations on 21st Sept. and 5th Oct. were concerned, there was no difference in the way the thing was They had the evidence of three witnesses who knew the facts—Mr. Bell, Mr. Clark, and Mr. Wilson—and that went to show that the operation was done in both cases in exactly the same way. What, then, was the difference between the two cases? The only difference was that two of the animals died. He supposed that was what called attention to the matter. That that should happen a fortnight after an operation of that kind would not prove cruelty in the carrying of it out—at least, not necessarily. As to the death of the two animals, what was the cause of that? Could it be traced to the way in which the operation was done, or to cruelty or gross carelessness in the doing of it, or was it done by a skilful man doing his best. In the latter case it was not cruelty, though the operation failed. If every operation that resulted in death were to be criminal operations, there were very few surgeons who would be safe for long. Fatal issues resulted from all operations. But how could they account for the death of these cattle? All the veterinary surgeons agreed, and the probability was, that their deaths were due to inflammation of the membrane of the brain, induced probably by maggots or by cold. That could not necessarily be due to any cruelty in the operation. It might have been due to maltreatment afterwards—that was to say, neglect; but in point of law neglect was one thing and cruelty another. A person might neglect to send for a doctor or neglect to do what was necessary in certain circumstances, but that would not involve cruelty and would not involve any positive crime. The Plymouth Brethren and some others who had religious views against being doctored, did not send for a physician, but it did not, as a rule, hold——

The FISCAL—They have been prosecuted lately in England.

The SHERIFF—But not in Scotland.

The FISCAL: We have but few of them here.

The SHERIFF: There are none. At all events, it was said that their death occurred through neglect, but that did not make the matter criminal. To do so the neglect required to be of a culpable and inexcusable character. Assuming this to be a relative charge, he asked what could Mr. Swan have done to avoid its occurrence. He sent the beasts out to a park after operating upon them. They stayed there eight or nine days, and while there they did not seem to have had anything wrong with them. The only suspicious looking feature in the whole case was that before he sent them off on their journey he took them into the court and there anointed them with Macdonald's sheep dip or something else. That seemed to show that they were not very right, or that he did this as a precaution. If this was done as a precaution the surprising thing was why he should not have kept them a little while longer.

This action only indicated that the animals were not perfectly right, With regard to the maggots, his Lordship had a strong conviction that the blue flies got on the sore places of the cattle while they were at Balhungie. The whole history of the breakdown of the cattle seemed to point to the fact that the animals were in an unhealthy state before they were operated upon. A little better care might have been taken of them, but want of care never could, according to his idea, be elevated to cruelty. Lord Young had stated in a similar case that the owner of cattle was, of all persons in the world, the man who had the chief interest in and the chief motive to look after them, and to take care of his own property. He could have no motive to neglect them. The cruelty suggested was altogether different from the cruelty of a man who beat his beast, and was careless and callous, and made it work when it was not able. All it rose to was want of prudence and thoughtlessness in sending away the cattle. The whole history of the matter went to show that Mr. Swan thought he was doing his best, and that he was not doing anything wrong or anything that was prejudicial to his interest. In the whole circumstances, he was to say without hesitation that the charges were not established.

The FISCAL: Does your Lordship say not guilty or not proven.

The SHERIFF: In the circumstances not guilty. His Lordship further remarked that he did not wish it to be understood that the skilled evidence as to precautions being taken had not a sound basis in physiology and common sense. It would be well for the farmers of the district to take into consideration that there were precautions that could be used in such cases, and in the circumstances it was well worth having the opinion of Professor Reid and Principal Dewar in regard to the matter. Whatever their expenses might be he had not a shadow of doubt that their physiology was correct, and that the same law of health that applied to man applied to animals, although perhaps not in such a very strong degree.

Mr. Dickie moved for expenses. The Fiscal opposed the motion, and the Sheriff refused to grant it, pointing out that before he could do so it would have had to be shown that the prosecution had been without probable cause.

The Court rose at 8.35, having sat for nine and a half hours.

Army Veterinary Department.

Veterinary-Lieutenant-Colonel A. E. Queripel is granted the temporary rank of Veterinary-Colonel whilst employed as Inspector-General, Civil Veterinary Department, in India.

Veterinary-Lieutenant G. K. Walker embarked on the 12th instant for a tour of service in India.

The Staff appointments at home and in the colonies which become vacant in 1896 are:—

Veterinary-Lieutenant-Colonel W. A. Russell, January 6th. Veterinary-Lieutenant-Colonel G. A. Oliphant, January 26th. Veterinary-Major W. Walker, May 29th. Veterinary-Major J. Hammond, December 9th.

Veterinary-Lieutenant-Colonel R. Poyser, Inspecting Veterinary Officer, Punjab Army, had rejoined at Murree from leave when the mail left India. Veterinary-Major J. W. Evans, who has held the officiating appointment since March last, on being relieved, proceeded to Kirkee for duty. Veterinary-Captain E. Taylor has been posted to the charge of the Army Veterinary School at Poona, and has left Rawul Pindi to take up his new duties in the Bombay Presidency. His place at Rawul Pindi has been taken by Veterinary-Lieutenant C. Rose, who has come down from the Tochi Valley. He has been in Waziristan since December last.—*Army and Navy Gazette.*

Notes and News.

ROYAL VETERINARY COLLEGE FOR IRELAND.—FIRST MEETING OF GOVERNORS.—The first meeting of the Governors named in the Charter for the above was held in the Royal Dublin Society's House, Kildare Street, yesterday.

There were present:—Professor Ambrose Bermingham, Professor Thomas Carroll, Professor D. J. Cunningham, W. Field, Esq., M.P.; Rev. Dr. Haughton, T. D. Lambert, F.R.C.V.S.; Sir Christopher Nixon, M.D.; Sir W. Thornley Stoker, M.D.; Joseph P. O'Reilly, Esq., J.P.; Rev. Francis Tobin, F.R.S.; Lieutenant-Colonel Clayton, A.V.D., Ireland, Governors nominated by the Crown; the Hon. Judge Boyd, Sir Thomas P. Butler, Bart.; Sir Charles A. Cameron, Colonel Gerald R. Dease, Robert Fowler, Esq., D.L.; John Freeman, F.R.C.V.S.; Professor W. N. Hartley, F.R,S.; Professor Emerson Reynolds, F.R.S., Governors nominated by the Royal Dublin Society; Professor George Francis Fitzgerald, F.T.C.D., one of the Governors nominated by the Commissioners of National Education.

The Hon. Judge Boyd was requested to take the chair.

The Charter of the Royal Veterinary College of Ireland was handed, by Sir Christopher Nixon, to the Chairman, who explained its provisions. It was laid upon the table and accepted by the Governors.

Sir Christopher Nixou explained the steps that were taken to found the Veterinary College, and gave an account of the present position of the undertaking.

Judge Boyd the explained that it was necessary to appoint honorary officers and an executive committee, and on the motion of Professor Cunningham, seconded by Sir Christopher Nixon, Mr. Thomas Carroll was requested to act as honorary secretary to the meeting.

On the motion of Colonel Dease, seconded by Professor Fitzgerald, the following were unanimously elected to fill the undermentioned offices:—

President—Sir Christopher Nixon, M.D.

Vice-Presidents—Prof. Cunningham, D.C.L., Oxon, F.R.S.; William Field, Esq., M.P.; Robert Fowler, D.L., J.P.; Rev. Dr. Haughton, M.D., F.R.S.; Rt. Rev. Monsignor Gerald Molloy, D.D.; Sir Thornley Stoker, M.D.

Proposed by Professor Fitzgerald, seconded by Mr. T. D. Lambert—That Sir Charles Cameron, M.D., be asked to act as Treasurer. Passed unanimously.

It was proposed by Mr. Field, M.P., seconded by Sir Thornley Stoker:—"That the following be named as Executive Committee of the Board of Governors:—The President and Vice-Presidents and Honorary Secretary of the Board of Governors, Professor Ambrose Bermingham, M.D.; Sir Thos. P. Butler, Bart., D.L., J.P.; Professor Thomas Carroll, M.R.I.A.; Professor D. J. Cunningham, M.D., F.R.S.; Lieut.-Col. Clayton, F.R.C.V.S., A.V.D.; Prof. George F. Fitzgerald F.T.C.D., F.R.S.; J. Freeman, F.R.C.V.S.; Matthew Hedley, F.R.C.V.S.; T. D. Lambert, F.R.C.V.S.; W. Pallin, F.R.C.V.S.; Jas. Talbot Power, D.L., J.P.

Proposed by Professor D. J. Cunningham, seconded by Mr. T. D. Lambert, and carried unanimously:—"That Veterinary-Captain A. J. Haslam, A.V.D., be asked to accept the office of Honorary Secretary to the Board of Governors."

Several gentlemen present spoke in high terms of Veterinary-Captain Haslam's energy, and generally a hope was expressed that he would be able to take the office of honorary secretary.

Proposed by Judge Boyd and seconded by Dr. Haughton:—"That the following form a deputation to wait upon the Chief Secretary to the Lord Lieu-

tenant with the purpose of enlisting his aid in obtaining the grant promised to the College."

The Honorary Secretary read the statement of accounts, which were passed.

The following is Mr. Morley's letter:—

"Irish Office, Westminster, S.W.,
"February 19th, 1894.

"Dear Mr. Nixon—I have given full consideration to the views of the influential deputation that waited on me in Dublin on the 30th ult., to advocate the establishment of a Veterinary School of Medicine in Ireland. I am now happy to be in a position to announce that the Government will be prepared to ask Parliament to authorise the allocation of a lump sum of fifteen thousand pounds as a grant in aid towards the cost of acquiring suitable college buildings and fittings. The necessary steps will be taken upon the Government being satisfied that the initial proceedings are so far matured as to justify the advance. We wish the project every success as being calculated in a marked way to promote a highly important public object.—Yours faithfully,

"C. J. Nixon, Esq." "John Morley."

The proceedings terminated with a hearty vote of thanks to Sir Christopher Nixon, Professor Fitzgerald, Professor Cunningham and Professor Carroll for the trouble taken to bring the project to its present promising condition.

Edinburgh New Veterinary College.—The following students of the New Veterinary College, Edinburgh, have passed their examinations before the Examining Board of the Royal College of Veterinary Surgeons in December:—First Professional Examination—D. M'Donald, Ross-shire; C. R. Twist, Birmingham; W. F. Wilson, Preston. Second Professional Examination—A. P. Beesley, Lancaster; J. D. Knowles, Wigan; J. H. Lomas, Manchester; A. Lawrie, Belfast; M. J. Mitchell, Limerick; A. J. O'Leary, Limerick; R. W. Williams, Aberystwith; R. J. Bailey, Bury; H. H. Ferguson, Warrington. Final Examination—T. Bowlas, Blackpool; W. Broomhead, Sheffield; A. Ferens, Durham; J. De Ville, Ashbourne; J. Hardie, York; R. Knight, Bolton; R. Rawlins, Chesterfield; R. J. Murnane, Limerick (theoretical portion): A. O. Hughes, St. Asaph; J. M'Phail, Edinburgh; J. Allen, Derby. At the same examinations of the Royal College of Veterinary Surgeons, the following passed the second professional with honours—Messrs. J. D. Knowles, first-class honours; A. P. Beesley, J. H. Lomas, R. D. Williams, and H. H. Ferguson, second-class honours.

Westminster, S.W.—The office of the Royal Commission on Horse-breeding has been removed from No. 15, Great George Street, to No. 22.

Glasgow Veterinary College.—The following students passed the A or First Professional examination:—

E. Soutar, Forfar; A. M. Spittal, Pollokshields; John Baird, East Kilbride; J. P. Small, Kilkeel, County Down.

The following students passed the B or Second Professional Examination:—

H. G. Simpson, Windsor (honours); D. Jack, Helensburgh (honours); James Reynard, Kirkintilloch; Earnest Jenkins, Cardiff; James M'Intyre, Port-Glasgow; J. Crawford, Beith; D. Walker, Rothesay; W. Crawford, Beith; Wm. Kilpatrick, Belfast; A. Fraser, Largs; H. O'Neil, Scarborough (honours).

The following students passed the first (or theoretical) part of the Final Examination:—

Gladstone Mayall Mossley, Manchester; J. Watson, Shettleston; J. M. Stirling, Kippen; W. M'Kenzie, Market Drayton; A. S. Adams, Glasgow; James Paton, Perth.

The following gentlemen passed the second (or practical) part of the Final

Examination, and received the diplomas of the Royal College of Veterinary Surgeons :—

Gladstone Mayall Mossley, Manchester; J. M. Stirling, Kippen; A. S. Adams, Glasgow; J. Paton, Perth; D. Wyllie, Stewarton.

The Dog in Belgium.—An agitation is being fomented in Belgium for the improvement of the lot of the dog, which, as is well known, is universally employed there in drawing barrows and small carts about the streets. In Brussels alone over 10,000 dogs are so engaged, and the total number of draught dogs in the whole country is probably not less than 50,000. Generations of servitude have made the Belgian dog a race apart. For his size he is said to possess the greatest pulling power of any animal, four times his own weight being considered a load well within his power. Taking his average weight as half-a-hundredweight, this means that something like 5,000 tons are daily dragged about by canine labour in Belgium. The economic importance of the Belgian dog has caused the Royal Society for the Protection of Animals to undertake an agitation for the amelioration of his lot. It is urged that the animals are frequently overloaded and often cruelly treated, and that in many cases they are given no opportunity for resting when the cart or barrow is not actually in motion. Among the reforms demanded are (1) the abolition of the whip, and severe penalties against the practice of kicking tired-out dogs; (2) the raising of the minimum shoulder height for dogs of burden from 20 to 22 inches; (3) a penalty against drunkenness when in charge, and against the employment of children as drivers; and (4) the compulsory arrangement of harness and shafts, so as to permit the animals to lie down when the vehicle is at rest.—*St. James's Gazette.*

Poisonous Horse-Peas.—At the annual meeting of the South Staffordshire and East Worcestershire Mining Engineers, Mr. F. Meachem read a paper on "Lathyrus-poisoning among the Horses at Hamstead Colliery." He said that some time ago, owing to the high price of horse-feed, they decided to use peas in place of oats or beans, and this they continued for twelve months without any ill effects. Early in November last, however, it was noticed that some of the horses seemed to be getting "thick in the wind," and after running a few journeys they would pant and stretch out their necks in their efforts to gain breath. The attention of the veterinary surgeon was directed to them, but he could offer no explanation. The horses became rapidly worse, and towards the middle of the month one died, six others were badly affected, and three died four days afterwards. When the horses died a sample of the food was sent to Professor W. Williams, of the New Veterinary College, Edinburgh, and he wrote that he detected the poisonous pea, or vetch, *Lathyrus sativus*, among the food. In all twelve horses died, and on others that had eaten the poisonous vetch, and which showed symptoms of poisoning, the operation of tracheotomy was performed. This gave them relief, but though they recovered they were permanently injured. The pea came from various places, and was of a variety of colours. As with men, so with horses; the lathyrus was a cumulative poison, the symptoms of poison showing themselves the sooner the greater the proportion of seeds in the horse's food. The Great Western Railway Company had lost twenty-four horses from the same cause, and there were many losses by other companies.

North-Riding Police Court.—Before Capt. the Hon. Francis Johnstone (in the chair), the ex-Mayor (Mr. G. L. Beeforth), Colonel Kendall, and Mr. J. Dale.—A False Veterinary Surgeon.—William Newton, Ayton, was summoned for having described himself as a veterinary surgeon contrary to the Veterinary Surgeons Act of 1881.—The defendant stated that he held a certificate which, unfortunately, he had misplaced, but which he thought he

could produce if time were given him. The magistrates on this ground adjourned the case.—As there was only one magistrate on the Bench who was present last week, Mr. G. E. Royle, who appeared to prosecute in the interests of the Royal College of Veterinary Surgeons briefly re-stated the facts.—The Chairman, in imposing a fine of £1, including, costs, said that defendant ought to have removed the brass plate containing the words, "Veterinary Surgeon" from his door after the decision in the Hunmanby case.—The defendant expressed his intention of taking down the plate.—*Scarborough Evening News*, 31*st October*, 1895.

Extracts from Foreign Journals.

A BAROMETRICAL MARE.

THE following notice is contributed by Monsieur D. Bonnigal, veterinary surgeon, at Vendôme, to the *Recueil de Médecine Vétérinaire* of 15th November:—"Observations on intermittent lameness caused by arterial lesions are not very uncommon, but I doubt if any surgeon has had the opportunity of studying a case of the kind so long as I, or in a greater variety of conditions. I therefore give the following details: In 1888 I bought a half-bred mare, seven years old, which had been broken to the saddle. During the summer months I used her both for the saddle and in harness, but never noticed anything abnormal in her action; on the contrary, I found her very active and swift-footed. In the beginning of autumn, the weather being rainy, I had one day to pass through half a mile of very miry road, which greatly distressed the mare. Next day, before she had gone a couple of miles, she began to limp on the off hind-leg, and a few minutes afterwards she was, practically, running on three legs. I then allowed her to walk and after a few minutes of this the lameness disappeared, only to re-appear sooner or later according to her rate of motion. From this time onwards I noticed that the limping, which never existed at our departure from home, always re-appeared either on the outward or the homeward journey, and finally I noticed that the mare hardly ever limped except when facing the wind. I summarised my observations, taken during five years of excellent service, as follows: (1) the mare limped only when running against the wind or when entering a valley filled with mist; (2) if she limped apart from these conditions, I had a sure prognostication of the approach of rainy weather; (3) if, immediately after rain, the limping was slow to appear in face of the wind, I was sure that good weather was coming; (4) prolonged rest prevented or retarded, according as the weather was good or bad, the return of the lameness or diminished its severity; (5) when the mare had got heated in a long run, the lameness re-appeared only after a pretty long stoppage; if there was no stoppage, I might ride or drive her a very long way without being obliged to put her to the walk; (6) year by year, the conditions remaining the same, the lameness became more serious and of more frequent occurrence, but did not prevent me from making use of the animal.

I had in this case to do with arteritis affecting the right external iliac artery, or one of its divisions. I need not detail the local symptoms, well known to all surgeons, nor to the possibility of a palliative treatment, which I did not attempt. The only importance which I attach to the facts observed by me, is in reference to the question of intermittent lameness, whether it is always possible to detect this lameness, and whether it ought to be treated as a

blemish that annuls a sale. I had a case in point some years ago, and it was as follows :—A brother surgeon had examined an old mare, and had found her suffering from a lameness which he considered so serious as to annul the sale of the animal. Some months after this examination by my *confrère* the mare was brought back—I forget by what legal process—to Vendôme where she had been originally sold, and she was submitted to the examination of three experts, of whom I was one. We examined the mare most carefully and conscientiously but could find no trace of lameness, and we gave our verdict accordingly. This happened before my experience with the barometrical mare, and I have thought since that the first surgeon may have been right and that we three Vendôme surgeons possibly examined the animal just at a time when such intermittent affections as I have described can best dissemble themselves. It is, I think, important to establish the fact that lameness caused by arteritis is not of a serious nature, and may show itself only in the face of a strong wind or in an atmosphere laden with moisture. Experts will therefore do well to test it under these conditions before giving a definite opinion.

Reviews.

THE OX: ITS EXTERNAL AND INTERNAL ORGANISATION. By A. SEYFFERTH. Revised and edited by PROFESSOR G. T. BROWN, C.B. 3s. 6d. (George Philip and Son, London.)

This is the latest addition to Philip's anatomical models, and is a production similar to the one on the horse published some little time ago and edited by Dr. Fleming. The editor, in his preface, indicates the proposed function of the work when he says that it "will be instructive to the owner of stock, who may find a new interest in learning something of the anatomy of the animals which are constantly under his observation; while the student, and possibly the experienced veterinarian, may amuse a leisure hour in refreshing his memory of structure—a knowledge of which was formerly gained by arduous work in the dissecting-room."

The introductory section is occupied by a brief sketch of the past history of the ox tribe. We are told that "the origin of our domestic cattle can be traced principally back to three different races of wild species—first, the primeval ox (bos primigensis), which must probably be considered as identical with the ure ox; secondly, the long-forehead ox (bos longifrons); and thirdly, the broad-forehead ox (bos frontosus), relics of which have been found and dug up in pile dwellings and bogs in various parts of Europe." A short account of the existing species of European and other cattle follows.

A chapter on dentition is illustrated with woodcuts which have already made their appearance in Professor Brown's small work on the dentition of farm animals.

The rest of the letterpress will probably not appeal to any but the lay reader, as the description of organs is very brief, and couched in as simple language as possible; in fact, there seems to be, in some places, an almost undue straining after simplicity of terms, with a result that will hardly commend itself to the scientific mind. We notice also numerous errors, which can scarcely be other than due to the printer, and which, undoubtedly, will be corrected in a second edition.

For the last part of the work, we have nothing but praise. This section consists of a number of superimposed and removable models illustrative of the external and internal conformation of the ox; and it is this porton of the

book that we commend to the notice of those of our readers who are desirous of acquiring, or refreshing, a knowledge of the topographical anatomy of the most important of farm animals.

There is one suggestion we should like to make to the publishers, and that is that the models in the next edition be mounted on calico, as on their present ground they are scarcely fitted for any but the most careful handling.

We have received for review an elementary veterinary manual written by our well-known friend, Mr. Harry Thompson, of Aspatria. This is a book which will be of undoubted value to students attending agricultural institutions, and is one which should be of value to men who purpose going abroad and who may perhaps be a score or two of miles away from any skilled person.

Elementary Lectures on Veterinary Science. Whitehaven: T. Brackenridge & Co.

Spratt's Patent, Bermondsey, have been good enough to forward us their Almanack for 1896 and inform us that any of our readers forwarding one penny stamp can obtain a copy of the same. It is about the best pennyworth that we have ever had.

We are very pleased to learn that the United Horse Shoe and Nail, Co., Ltd., Cubitt Town, E., have again gained a Gold Medal for the excellence of the articles they turn out.

We have received for review the second edition of Veterinary Obstetrics by Fleming, but owing to its importance are unable to review it this month. It is published by Baillière, Tindall & Cox, 20, King William Street, Strand.

Errata in December Number:—

Page 455, line 13 from bottom, *read* 0·1 gramme Eserine and not 1 gramme; eight lines from bottom, for 5 grammes Chloride of Barium, read 0·5 gramme; also page 395, line 10, last word on line, for "almost" read "almost always;" page 426, 14 lines from top, for "purgatories" *read* "purgatives."

Communications, Books, Journals, etc., Received.

Recueil de Médecine Veterinaire (Alfort); La Presse Veterinaire (Paris); L'Echo Veterinaire (Liege); Annales de Médecine Veterinaire (Brussels); Oesterreichische Monatsschrift für Thierheilkunde (Vienna: M. Perles); La Revista Veterinaria (Buenos Aires); Berliner Thierärztliche Wochenschrift (Berlin: Richard Schoetz); American Veterinary Review; The Journal of Comparative Medicine and Veterinary Archives; Investigations concerning Infectious Diseases among Poultry; Buchhandlung für Medicin und Naturwissens; Joshua A. Nunn, F.R.C.V.S., C.I.E., D.S.O., Veterinary-Captain, A.V.D., Principal Lahore Veterinary College; East Cumberland News, The City Press; Bulletin of The Johns Hopkins Hospital; Modern Medicine and Bacteriological Review; Fleming's Obstetrics; Veterinary Department, Dublin Castle; T. B. Goodall, Esq.; The Evening Herald, Elementary Veterinary Manual for the use of Officers attending Veterinary Classes; Pathologie interne des Animaux Domestiques, par C. Cadeac, Lyons Veterinary School; Elementary Veterinary Manual, by Surgeon-Captain Bruce Seton, Indian Medical Service; Agricultural Journal of Cape Colony; The Wynberg Times; North British Agriculturist.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

FEBRUARY, 1896.

THE Council of the Royal College of Veterinary Surgeons met on Wednesday, 22nd January, to do a very large amount of business. There was a good attendance, and the first business of particular importance transacted was the determination as to how the marks awarded by examiners should be arranged. It was in the minds of the majority of the Council that when they passed the new rules, it was intended that, if a student obtained 45 marks collectively, in his written and oral examinations on any subject, that number made it a "pass." At the recent examinations the examiners did not seemingly understand what was a distinct instruction to them, and they rejected every man who made less than 45, either in his written or his oral examinations. A man making 22 marks in his written, and 23 in his oral, did not pass. But a man making $22\frac{1}{2}$ in his written and $22\frac{1}{2}$ in his oral, total 45, all the same, was passed. This subject was well discussed, and the Council almost unanimously decided that it matters not, whether the candidate obtains his minimum number of marks either in the written or in the oral, or between the two, he passes. It is now possible for a candidate who is a bad writer but a good speaker, to obtain, say, one mark in his written, and 44 in his oral, to pass his examination.

The next business entered upon was a motion by Mr. Edgar, for the appointment of a committee to reconsider and if deemed advisable, to amend the first schedule referred to in bye-law 52. For some reason or other Mr. Edgar requested permission to withdraw his motion, but then after receiving the consent of the Council, he gave notice of another motion, and that was virtually to the effect, that no one could enter a college as a veterinary student unless he was in a position educationally to register as a medical

student. Our readers who have sons and pupils aspiring to become veterinary surgeons, should carefully mark this—we would also like to point out that if the difficulties placed before aspirants to the profession become too great, then it will be a matter to be taken up by Government, because there is no doubt, that the Government having protected and assisted us by virtue of the Charter and the Penal Clause, etc., etc., they have granted, will look to us to supply the British public in general with fair-class useful practitioners, and certainly the Government will object to us making the entrance to the profession so difficult that this class will diminish—even it may be, ultimately, as extinct as the Dodo. To take a sensible view of the matter, is it likely that a farmer, for example, is likely to keep his son at school until he is eighteen years of age to befit him for his preliminary examination, and then send him to college for four or five years, so as to enable him to make a humble livelihood by calving cows, firing horses, treating colic, &c., and making perhaps £150 a year; that farmer, we think, would be a fool, and we would advise him to make his son a draper or a grocer; at the same time although giving this advice, the profession will suffer very much indeed, as undoubtedly the best men we have in the profession are those who have a thorough knowledge of agricultural pursuits. The public and the teachers do not want "toffs" who do not know the near from the off side of a horse, when they arrive at College, and who, when asked to pick up a foot, or put on a twitch, or pull at a rope, look aghast, and also at their cuffs, and their nice white hands. What we like to see among freshmen is a thorough knowledge and love of the lower animals when in health, and we consider that Mr. Edgar's motion if carried will strike with maleficent effects on a class of young men who would make our best veterinary practitioners. Let it be understood that a high standard of education we approve of, but having regard to the duties that, as a rule, fall to a veterinary surgeon to perform, and the class of man necessary to do so most successfully, we maintain that not only will the public suffer, but that the men who pass the portals of the veterinary profession, will not be those likely to be a credit to us or themselves as practitioners. A good education by all means, but, at the same time, we must consider the laws of supply and demand, and the fitness of the tool for its purpose; in short, we would much rather educate a young man for the practice of our profession, whose

knowledge of any language but his own is of a rudimentary kind, or, in fact, *nil*, who loves the lower animals, who knows the points of a good horse, and the various breeds of cattle that he will ultimately have to deal with. I am of opinion that a preliminary examination which demanded a knowledge of these matters, at the sacrifice even of a foreign language, would be a wise procedure. I offer this as a suggestion of some value for the consideration of the Council of the Royal College of Veterinary Surgeons.

ESSAY ON "THE DIAGNOSIS OF LAMENESS IN THE HORSE."

BY "BADMINTON."

(*Continued from page* 17.)

Hip-Joint Lameness.—The diagnosis of this lesion is a difficult and unsatisfactory business to the veterinarian. Though of not so unfrequent occurrence as to render its appearance unfamiliar, the symptoms are of so general a character as to leave much doubt in one's mind as to the correctness of the diagnosis. Hip lameness is not uncommonly associated with rheumatism or the scrofulous diathesis in young animals, but the most common seat is the trochanter major of the femur. In this latter seat it is termed by some "Trochanteric Lameness." Among the symptoms are the following:—There is a restraint in the action of the joint in walking, quite unlike the free forward and backward motion of nature; a discernible hesitation and stiffness accompanying the displacement of the thigh, and a consequent shortening of the step on the affected side. There may also be a certain gesture of abduction, or rather a suggestion of circumduction, similar to that which may be observed in lameness of the shoulder. But inasmuch as this manner of gait may also occur in association with other affections, such as enlargement of the spermatic cord, or disease in the inguinal region generally, it is not pathognomonic. Absence of these affections, however, must be accepted as an important element of the case. This abductive or circumductive movement is not always distinctly seen while the animal is walking, so the pace should be increased to a trot. Says Principal Williams, "There is 'a hop and a catch' in the lame limb, and a want of movement in the quarter which, to the practised eye, is quite suggestive. The whole of the quarter is elevated with

as little motion of the hip as possible, the other articulations being flexed with ease." In some severe cases, there is elevation of the foot while standing, and a relaxed condition of the gluteal muscles. In *hip-joint* lameness, there *may* be heat felt, and in some cases pain caused by pressure applied per rectum, or by pressure of the bones one against the other; but in trochanteric lameness, the heat and swelling are marked, and there is pain on pressure. The swelling of trochanteric lameness is more apparent on comparing the two sides, and to see it distinctly, the practitioner should stand both behind and at the side of the patient as the shades of light sometimes hide it from observation. The symptoms of a milder form of hip-joint lameness, and that arising from disease of the trochanter, do not differ in any peculiarity of *gait*. Atrophy of the muscles has been considered as a valuable symptom. In both forms of lameness, it soon manifests itself in the muscles of the quarter, and is apt to lead the practitioner to confound the disease with fracture. But in disease, the wasting and inequality of the quarter appear after the animal has been lame for some little time, whilst in fracture, they are seen immediately after the displacement of the bones. It must be borne in mind, however, that the condition may be the result of the non-use of the joint arising from a state of rest induced by the presence of other lesions remote from the hip, as spavins, ringbones, etc.

Stifle Joint Lameness is of two kinds, viz. :—That affecting the joint proper or femoro-tibial articulation, and that affecting the articulation of the femur with the patella.

The ordinary inflammatory phenomena are sometimes discoverable, but perhaps the more important symptoms are those manifested in the gait and in the position of the limb when the animal is at rest.

Lameness in the Joint Proper.—Standing with the limb flexed, the thigh upon the pelvis, and the tibia upon the femur, is obviously the attitude which the animal will instinctively assume in order to avoid painful pressure of the bones against each other. This is the position while the animal is at rest, but when made to move the relative positions of the various bones are altered, and instead of being flexed, the stifle is maintained in a rigidly extended state. In this manner the joint is locked, its movements suspended, and as a result the heel of the foot touches the ground first.

Lameness from Disease of the Bursa-Patellæ.—As in the preceding form the position while standing is that of semi-

flexion and in addition there is a swelling in front of the joint caused by increased secretion of synovia.

This swelling is prominent, hard and *persistent* when the leg is extended. As regards the gait, there is usually some dragging of the toe, difficulty in flexing the joint and bringing the leg forward; the movement being performed stiffly and with a suggestion of circumduction.

Hock-Joint Lameness is characterised principally by a want of flexion in the joint and the animal generally goes on his toes. In spavin lameness particularly, the lameness is aggravated and rendered more apparent by the following method:—Take up the lame leg and flexing it well at the hock keep it in this position for a minute or two. When released and the animal sent on at a trot the lameness is increased, in some cases so much so that the horse is unable to put the foot to the ground and hops on three legs. Personally I have found this simple plan a great aid to diagnosis of this common disease.

The Nature of the Lameness.—The detection of the seat of lameness and the determination of the nature of the same, are steps so nearly related that when the knowledge of one has been acquired, the discovery of the other cannot be far off, at least in the majority of cases.

I had intended here to discuss the characteristics of the commoner lamenesses, but time forbids more than a short reference to some of them.

Navicular Disease.—The diagnostic signs are:—

(1) Negative and (2) Positive:—

(1). The negative signs are the absence of any apparent disease or injury in the limb which might account for lameness. Thus we limit the seat of disease to the foot. This region must now be explored, and if we except some positive symptoms—which are most frequently inconstant and which will be referred to later– there will be no appreciable signs, and we further locate the seat to the interior of the foot.

(2). Most commonly these symptoms are insidious in their development, pointing being the first, though, as before stated, not a constant symptom, or, there is a peculiar shifting or uneasiness in the feet. There is a form of the disease, however, which is manifested suddenly, is transient, or may be metastatic, attacking different feet at intervals, and which is said to be rheumatic in character. But to return to the usual form; after a varying period of time, lameness succeeds, accompanied by a shortness of step, and the animal goes on his toes. This peculiarity of gait causes excessive wearing

of the shoe at the toe, which is more noticeable when the lameness is in one foot only. The patient avoids bringing his heels down and digs his toes into the ground. There is sometimes heat and tenderness upon pressure in the hollow of the heel, and redness of the frog and sole immediately below the navicular bursa. Redness of the frog and sole, however, may arise from bruises, so it is not to be depended upon.

The most positive signs, then, are those manifested in the gait.

A horse suffering from this lameness comes out of the stable, after an interval of quietude, stiff and lame; he may be scarcely able to put his lame foot to the ground, but after he has been exercised for a short time, particularly if the ground be soft, the *great* lameness disappears. He is afraid to go down hill, and when doing so the lameness and gingerly, or "cat on hot bricks," style of gait is very distinct, on account of his trying to avoid putting weight on the heels. After awhile, the heels become contracted or "wired in," the frog shrunken, and sole more concave.

The age and breed of the animal are points to be taken into consideration. Young animals are rarely affected, and the disease is commonest in well-bred harness horses. It rarely happens that a horse is attacked for the first time in both feet, but from pointing or resting the lame foot in the stable, and favouring it while out, more weight and work is imposed on the sound foot, which soon causes it to fail.

Cases are reported, however, in which the lameness was permanently confined to one foot, but no doubt these are rare.

"Laminitis" or "Founder."—The symptoms of this disease vary with the cause in their rapidity of manifestation and in their severity. When due to violence to the feet—concussion for example—they come on suddenly and are soon severe; when due to other causes they come on more gradually, and are less severe. If seen in the earliest stages, the first thing noticed is unwillingness in moving, and if made to "stand over," the animal appears to be stiff in the shoulders and loins. If brought out and walked on he goes on his heels in a scrambling kind of manner, jerking his hind legs up quickly. The lameness improves if the animal be kept moving, and he soon appears all right again; and so the time when treatment would be attended with the greatest success is lost. As the disease progresses, the animal begins

to blow, sweats, and assumes certain positions according to which feet are affected. If the *fore* feet alone are affected, the hind limbs will be advanced as far under him as possible, the fore extended and resting on the heels, and the animal every now and then sways himself backwards, and raises his toes. When compelled to move, he first shuffles his hind legs further under him, then, throwing all his weight on to them, raises the trunk and advances the fore limbs, bringing them down again very timidly.

This is the usual form caused by concussion. A quick way to diagnose is to attempt to back the animal, when he will at once elevate his toes and throw his weight on his heels. When the *hind* feet alone are affected, he stands with all his feet as far under him as possible, "all of a heap," as it were, and is almost unable to move one way or another. Should *all* the feet be affected, the standing position assumed is similar to that when the fore feet alone are affected, but in these cases—especially if the animal has had a previous attack—he generally goes down, lying stretched out on his side, with the limbs stretched out to their utmost, or pawing the ground almost incessantly. The pulse is accelerated, full and bounding, respirations increased, and the visible mucous membranes are injected; hoofs are hot to the touch, and if gently tapped with the hammer, the animal groans with pain. The relief experienced when the animal goes down, appears to be immediate, and this point bears on the treatment.

In chronic laminitis, a horse goes on his heels, consequently there is a greater growth of horn at those parts. Confirmed cases show a succession of rings around the hoofs which are irregular, are thicker at the heels than at front, and run towards the anterior part of foot. "Grass Rings" are regular, and have wider interspaces, and the sole in chronic laminitis is convex instead of concave, constituting what is known as "pumiced sole."

Sidebones may or may not cause lameness, depending to a great extent on the class of animal in which they are found. They are commonly met with in heavy draught horses, and if associated with a strong, open, and well-developed foot, do not, as a rule, cause lameness. If found in the lighter bred horse, however, or in any in which the pace required is more than a walk, they cause lameness sooner or later.

Sidebones are commonly met with in the fore feet, hardly ever in the hind. To detect their presence, it is necessary to take up the foot. Naturally, the lateral cartilages are yielding and elastic, but when ossified they lose this character,

becoming hard, unyielding, and enlarged. The deposition of bone may be uniform, involving the whole substance of the cartilage, or it may be in isolated spots, either at the junction of the cartilage with the pedal bone anteriorly, or involving the posterior borders, forming a hard kernel-like enlargement.

The anterior sidebone more commonly causes lameness than the posterior one.

Sidebone lameness is characterised by the toe of the foot being first brought to the ground; when both feet are involved, by a shortness of step and want of elasticity or springiness in action, resembling that of navicular disease.

Ringbone Lameness is generally occasioned during the formation of the deposits. When fully formed, they may or may not cause lameness, depending mostly on their position. If found involving the pastern or coffin joints, they are termed "True" Ringbones. "False" Ringbones are found about the middle of the os suffraginis. These latter are due to an increased development of the roughened ridges of the bone, which give attachment to the sesamoidean ligaments, and do not, as a rule, cause lameness.

"True" ringbones are termed "high" or "low" according as to whether they involve the pastern or coffin-joints respectively. But both forms may exist at the same time. When involving either articulation, they always cause lameness at their commencement, but when anchylosis is completed, such lameness may almost, if not entirely, disappear. In other cases, there is obstinate lameness. They vary in size, and the degree of lameness caused is not proportionate, some small ringbones causing greater lameness than large ones. Those situated at the front of a joint cause greater lameness than those found laterally. Forcible flexion of the joint generally causes pain, as also does pressure on the enlargement, especially on the softer and more recent deposits. The tread of the animal differs according to the position of the ringbone. Says Principal Williams, "If in the fore extremity, except the deposit be on the posterior aspect, the patient puts his heel to the ground first; but when in the hind pastern the toe touches the ground first, always when it is situated in the upper position except it be in front; when in the lower position the heel comes down first. From this peculiarity in putting the foot to the ground, it is apt to be confounded with laminitis, seedy toe, and inflammation of the coronary band. It differs from laminitis by the absence of pain at the toe, freedom from

fever, etc., and by the heat being confined to the upper part of the foot only. An examination of the foot will determine whether there be a seedy toe or sand crack in its front; and the absence of the striated appearance of the wall of the foot will distinguish it from inflammation of the coronary substance.

Splints cause lameness manifested mainly by the following symptoms :—

(*a*) The animal may walk sound and even trot so on soft ground, but is exceeding lame when trotted on a hard surface, and this lameness increases with exercise.

(*b*). The extreme dropping of the head when the sound foot comes to the ground is characteristic of splint lameness.

(*c*). Tenderness on pressure and some little heat may be recognised, even before there is any visible enlargement. In some cases, considerable soft swelling may be felt in the earlier stages, and in acute cases threatening abscess, the lameness is extreme.

Sprain of the Flexor Tendons.—This term is a misnomer, as the sprain is really of the check ligaments, either carpal or tarsal.

Sprain of the superior check ligament has been already described. Those to which we now refer—the "inferior carpal check" and the "tarsal check ligament" arise from below the upper extremities of the metacarpal and metatarsal bones, run down the legs posterior to the suspensory ligament, and become attached to the perforans tendon. There is no superior check ligament, or, at least, only a rudimentary one in the hind limb.

The inflammation arising in these ligaments extends to the flexor tendons. During the earlier stages, the heat and swelling are confined to the ligament; later, the same conditions are found in the tendons. When the parts are pressed upon, the animal evinces pain, often stands with knee bent, and heels raised, and when moved, digs his toes into the ground. When in the hind-leg, flexion is very imperfectly performed; he seems to throw the limb behind him as he lifts it from the ground, and the fetlock and hock are not flexed as in sound action. When standing, the heel is raised. To detect very slight sprains, especially if situated in a hind-leg, it will often be necessary to compare the thickness of both legs by careful manipulation, as the swelling can only be detected in that way on account of the coarse hair and thick skin of cart-horses' legs. In a better bred animal, a difference in thickness can be seen as well as felt.

ESSAY ON LAMINITIS.*

BY P. ABSON.

LAMINITIS, or inflammation of the feet, is a disease of common occurrence and of great importance to the veterinary surgeon, and it is for this reason that I have chosen it for the subject of my essay.

The draught horse, the hackney and the pony, are all liable to be affected with this painful and distressing disease, and if not promptly and skilfully treated may remain lame for the rest of their lives. I think there cannot be a more pitiable sight than to see an animal suffering from this disease; the distressed look shows us the agonies he is suffering, for what can be more painful than an inflamed highly sensitive organ like the foot, which, unlike most other parts of the body, is unable to relieve itself by swelling, on account of the irresistible horny box in which it is enclosed. The disease although chiefly confined to the feet may affect other parts of the body, as the lungs, bronchi, and intestines, by extension of the inflammation and for this reason it was at one time called "metastatic."

In order that the pathology of the disease may be understood it is essential to know the anatomy of the foot. To describe the anatomy of the foot in full would take up too much of your valuable time and be wearisome, so I will but give a very short account of it.

The foot is a complex organ consisting of a horny box, containing the os pedis, os navicular, and os coronæ, the lateral cartilages, ligaments and secreting structures, along with arteries, veins, nerves, lymphatics and fatty structures.

The hoof is a truncated cone in shape, enveloping the softer structures, and is divided into wall, sole, and frog.

The wall is that part of the hoof seen when the foot is on the ground as well as small inflected portions forming the bars. The wall is again divided into toe and quarters, although there is no distinct boundary line, the toe being that anterior part which is placed on the ground. It is the oldest, deepest, and thickest part of the hoof. On both sides of the toe are the quarters, inner and outer, extending as far backward as the inflection of the wall to form the heels, and are thinner and not so deep as the toe. They expand slightly when the foot is brought to the ground. The wall is convex externally and is covered over by a modified horn, the periople, a secretion from the coronary cushion (perioplic

* Read before the Edinburgh Veterinary Medical Society.

ring). Internally the wall is concave, and lined with horny laminæ, consisting of plates of horn arranged perpendicular to the surface, receiving between them, in a dove-tailed manner, the sensitive laminæ; the two are only separated from each other by a layer of soft epithelial cells. The function of these cells is to prevent the two parts being separated from one another, and to allow a little movement.

On the superior border of the wall is a groove, the "cutigeral groove," for the reception of the coronary cushion.

The sole is that horny structure situated on the inferior surface of the foot, between the lower border of the wall and bars. Posteriorly, it has a triangular notch for the insertion of the point of the horny frog. The inferior surface is scaly, concave, and does not quite come to the ground. The superior surface is convex and studded with numerous little holes for the reception of the papillæ of the velvety tissue, these holes being the open ends of the horn-tubes.

The frog is the soft triangular or wedge-shaped mass of horn situated between the bars; the apex is inserted into the triangular notch in the sole. On the inferior surface the frog is cleft, forming the middle lacuna, the space between the frog and bars being the lateral lacunæ.

The secreting structures consist of:

(1) Sensitive laminæ.
(2) Coronary band.
(3) Velvety tissue or sensitive sole.
(4) Perioplic ring.

The coronary band is a vascular structure situated in the cutigeral groove. It is made up of vascular papillæ, which secrete and project into the horn tubes of which the wall is composed, and a large plexus of blood-vessels and connective-tissue.

Sensitive sole, also called velvety tissue, is found on the solar aspect of the os pedis, and is made up of vascular papillæ, blood-vessels, nerves and connective-tissue, the same as the coronary band.

The sensitive laminæ are laminæ secreted by the coronary band; they are vascular and very sensitive, and are arranged in rows perpendicular to the surface of the os pedis, and as I have said before, interdigitate with the horny laminæ of the wall and bars. They are attached to the wall of the pedal-bone by connective-tissue, and are supplied by blood-vessels that pass through the foraminæ of that bone.

Some anatomists say that the sensitive laminæ secrete horn during health, but this is disbelieved by others. In disease, I think, it is well known that they secrete horn, and it is for this reason that I have described them as secreting structures.

The fatty frog is situated between the lateral cartilages and above the horny frog. Superiorly is the flexor pedis perforans tendon and the navicular bone. It is composed of fat, connective-tissue, elastic tissue, blood-vessels and nerves. The function is to modify concussion.

I am afraid, if I were to describe the bones, etc., it would be wearisome and take up too much of your time, so I will continue with the

Etiology.

The causes of laminitis are many and varied, but in the majority of cases I think it is due to the thoughtlessness of the rider or driver.

Draught horses are much more subject to this disease than the lighter breed, and this can be accounted for by the weight of the cart horse being greater. This increase in weight has to be carried by the feet, which very often have been weakened by the paring knife and bad shoeing. Small fat ponies are generally affected, and this can be accounted for in the same way. Concussion is one of the most common causes; horses with high action, or horses that have been galloped on hard roads are good examples where laminitis is caused by concussion. Long journeys with heavy loads in hot weather are constant causes. Young horses not in condition are more liable to become affected than horses of mature age that have had regular exercise or work. Bad feeding, sudden change of diet, such as a diet of dry corn suddenly changed to green food; barley in improper quantities, and, according to Professor Pritchard, flour gruel given to horses suffering from diarrhœa; potatoes or any food which deranges the digestive organs; large quantities of cold water given when horses are overheated; sudden chills; large doses of purging medicines when the horse is not in a fit state to receive them, are all said to be causes of laminitis.

It may be secondary to some other disease as pneumonia, bronchitis and enteritis. Some authors say that the affections of serous membrane terminate in laminitis by metastasis; Principal Williams does not agree with this view; he believes that when the feet become inflamed during the progress of

another disease, that a mucous membrane is involved, and that the inflammation of the laminæ is due to the extension of the irritant from the primary seat, by means of the skin, to the feet. The term metastasis as applied by some writers does not convey a correct meaning, for metastasis means a change in the seat of the disease. This is not the case when laminitis is a complication of pneumonia or enteritis, because the feet become inflamed; the inflammation does not move from the lungs or intestines, as the case may be, but both exist at the same time. Bad shoeing is a predisposing cause; the feet are weakened, and are unable to stand the concussion and the weight of the body. Laminitis when seen in one foot is usually a secondary affection to some serious affection of the opposite leg, as open joint. The sound limb has been compelled to carry its own share of weight, as well as its fellow's, for a lengthened period, and in time becomes affected with laminitis, causing terrible agony. When horses are travelling by water or rail, they have very little room allotted out to them, so they are compelled to stand in one position for a great length of time, thus predisposing the animals to laminitis.

In the *Veterinary Record*, Mr. W. Hunting, Junr., describes cases of laminitis due to the retention of the fœtal membranes. He says; "The mares aborted and retained the placenta which when not removed within 10 hours, was followed by laminitis." He goes on to say: "After removing a retained placenta, straining occurs and large quantities of chocolate coloured fluid are expelled from the uterus. This generally lasts for several days, and when it ceases the lameness rapidly disappears. In these cases the pulse is very quick and the temperature does not show a proportionate rise." They were treated by injecting a solution of boracic acid into the uterus, and immediate removal of the shoes, and the walls of the feet lowered. With this treatment perfect recovery ensues rapidly. At three different farms a second case occurred, and on this account Mr. Hunting suspects contagion. Mr. J. McLaren Young in the same journal says he saw three such cases as mentioned by Mr. Hunting, and it certainly looks suspicious of contagion.

Can laminitis be due to contagion?

There are no proofs of it, and no organism has been found, so we cannot accept it as a contagious disease.

Pathology.

In laminitis the sensitive laminæ are the principal parts

inflamed, but not these exclusively, for the sensitive sole and os pedis are also involved. The vessels of the foot are greatly congested and an exudate is poured out from them; the toe being the most vascular part, consequently the amount of exudate is greatest there. The pressure of the exudate on the sensitive structures of the foot causes great pain and unlike most other parts of the body, it cannot be relieved by swelling, because it is enclosed in a dense, irresistible, horny box. This is accompanied by fever, as indicated by the elevation of temperature, and if the attack be not severe, resolution takes place without any marked structural change. The temperature falls to its normal standard, the inflammatory exudate gradually becomes absorbed, leaving a space between the sensitive and horny laminæ, for it was between these two structures that the exudate was chiefly confined. The space, so left, becomes gradually filled up with an imperfectly developed horn, which grows down along with the wall and constitutes "Seedy Toe."

The finding of this space between the sensitive and horny laminæ caused the erroneous belief that the process was one of absorption of the uniting material between the sensitive and horny structures.

If the inflammation is very severe and of long duration, the exudate, by constant pressure against the wall in one direction and the pedal bone in another, causes the latter to descend. This descension of the pedal bone and a perverted secretion of the horny sole, constitutes what is known as a "Convex Sole," or commonly called "Dropped Sole" or "Pumice Sole." The sole in this case is convex, thin, weak and spongy, due to the malsecretion of the sensitive sole.

In more acute cases where the exudate has been very great, combined with the perverted secretion of the sole, and where the shoes have not been removed, the pedal bone pierces the horny sole and is exposed.

In other cases a further change than in the sensitive laminæ takes place. The periosteum becomes detached from the surface of the pedal bone by an accumulation of the inflammatory exudate beneath it. The substance of the bone, its vascular canals and spaces are filled with this exudate, which is of a dirty red colour, consisting of broken-down blood. By this plugging of the canals, etc., the circulation is greatly impeded, and in extreme cases, necrosis of the pedal bone is the result, from want of nutrition. When the bone is involved, laminitis is an incorrect term for it. Peditis, as suggested by

our Principal, would be a more appropriate name for it. By pressure of the inflammatory exudate the bone becomes absorbed round the borders and is reduced in size, especially at the toe and sides, in proportion to the amount of pressure. At the same time, the bone is rendered more brittle and friable by ossification of the exudate within its substance.

Frequent attempts are made by nature to relieve the inflamed imprisoned parts of their horny covering. This, however, is not very often accomplished, but a ribbed appearance is left on the outer surface of the wall, indicating that attempts have been made to do so. Elevated ring may be seen on healthy feet, but these differ from those seen on a laminitic foot. The rings in laminitis are irregular, and run close together towards the front of the foot, but in a healthy foot, they run together at the heels and are wider apart.

Changes in the Secreting Structures.—The sensitive laminæ sometimes in very bad cases become ossified. This is a very undesirable change, because their valuable healthy function of modifying concussion is lost, and if along with this there be a friable condition of the pedal bone, fracture of the latter is apt to occur. In very acute cases, where the pedal bone has been moved from its proper position, there is pus between the sensitive and horny laminæ, instead of a serous exudate, and this, not being able to find exit in any other way, is discharged from the coronet. Suppuration may only be present at the coronet, causing the horn to separate from the coronary cushion. After absorption of the exudate, the space left is filled up by an imperfect secretion of horn, part of which is secreted by the coronary cushion and part by the sensitive laminæ.

Mr. W. H. Brooke, M.R.C.V.S., describes a case of *Gangrenous Laminitis*, which may be interesting and is as follows :—

"The *post-mortem* showed the sensitive laminæ to be in an advanced state of gangrene, being of a semi-pulpy consistence, and of a greenish hue, with a space between the horny and sensitive laminæ, extending round the entire toe, quarters and heels, and containing remains of disintegrated laminæ and inflammatory material, the whole having a disagreeable odour."

He concluded by saying: "The cause, although probably influenced by the lymphatic constitutional condition, no doubt had its origin in an injury to the foot, of a violent nature," which, however, he was unable to trace.

Changes in the horn.—By the pressure of the exudate

within the horny box, the normal position of the pedal bone is altered, and in consequence of this, the shape of the foot is also altered. The superior part of the foot is contracted, and the foot in general has a flattened appearance, and the surface is marked with the rings already described. The sole instead of being concave, is soft, spongy and convex, causing it to bulge below the inferior margin of the wall, and on this account requires very careful shoeing.

The pedal bone may penetrate the sole as before alluded to.

Laminitis may be divided into three forms, acute, subacute and chronic, according to the severity of the disease. The chronic being that form remaining after the more acute symptoms have passed off.

Acute Laminitis.--This may affect the fore or hind feet, or both, or even one foot.

Symptoms when the fore-feet only are affected.—The animal is found to be very much distressed and fevered and excessively lame, hardly daring to move a foot from the ground for a second. The pulse is strong, full, and accelerated, which is a characteristic sign of the disease; the respirations are hurried, the nostrils dilated, and the nose extended; profuse sweats bedew the body. There is a general cramped appearance, the fore-feet are extended in front of the body, and the weight brought to bear on the heels; the toe being the place where the exudate is greatest is elevated to relieve the pressure; the hind limbs are drawn under the body. The animal will be noticed to swing back in the halter, or if it be not fastened up, will back into a corner to support itself against the walls; a groan may often be heard indicating the severity of the pain. The animal is moved with great difficulty, but frequently it lies down on its side with the legs fully extended, and scrapes the floor with its fore-feet. In this position the pain seems to be somewhat relieved and the respiratory movements are not so frequent, and if it be made to rise it does so with the hind feet first, the same as a cow does. If made to advance, the hind legs are the first to be drawn forward, then with a sudden leap the fore-feet are advanced. The feet are hot, the coronets swollen, and a throbbing of the plantar arteries can often be felt.

When the Hind Feet only are affected, the number of respirations are increased, the pulse is full, strong, and accelerated, and the mucous membranes highly injected. The symptoms are very much the same as when the fore-legs are the seat of

the disease, except in the position of the legs. All the four feet are brought together under the body, the fore-feet are drawn backwards and the weight is put chiefly on the toes; the hind legs are drawn forwards, and the weight is brought to bear chiefly on the heels. When the hind feet are affected, the pain appears to be more severe than when the fore-feet only are affected, and the task of making the animal move is greater also. There is a constant resting of the feet, first one and then its fellow, but the recumbent position seems to give great relief, and it is taken advantage of. Some horses will not lie down, and in these cases the respiratory movements are greatly accelerated and the pain more intense, and death is often the result.

When all four feet are the seat of the disease, the animal very seldom remains on its feet, but lies down, and it is almost impossible to make him rise. The feet are hot, the plantar arteries throbbing, and a combination of the symptoms manifested when the fore and hind legs are affected. If the feet be examined by gently tapping with a hammer, great pain is evinced.

Laminitis in one Foot.—This is generally a result of a severe injury to the opposite limb. The sound limb has to carry the extra weight for a great length of time, in order to relieve its affected fellow. This in time becomes laminitic; the originally lame leg is now compelled to carry the body weight, and the laminitic foot is entirely elevated from the ground, or, if the animal is made to walk, the heel is brought to the ground first. The temperature is not elevated to such a degree as in the other forms.

Although the symptoms of laminitis are very characteristic, it has been mistaken for other diseases, as nephritis, because when the loins are pressed, pain is manifested; for disease of the respiratory organs, on account of the hurried respiratory movements, dilated nostrils, etc. All these mistakes may be avoided if the standing position be carefully noticed, and the feet examined. It may also be mistaken for myositis of the gluteal and muscles of the loins, but if the following symptoms be carefully observed no mistake should be made. There is great stiffness in both diseases. In myositis there is no desire to lay down, but if the horse be put down the fever and pain are increased. This is not the case in laminitis, for the animal generally assumes the recumbent position, and seems to get great relief from it, as

indicated by the temperature becoming lower and the pulse less frequent. In inflammation of the muscles, the horse fixes its feet on the ground and does not move them until he is compelled to do so, but in laminitis, when the animal is roused to its feet, it becomes restless, alternately resting the feet, especially if the hind feet only are affected, and again lies down whenever he gets the opportunity.

Acute laminitis may terminate in resolution, the parts gradually gaining their normal condition, or in suppuration, gangrene, or the chronic form.

Treatment of Acute Laminitis.—A difference of opinion exists as to whether a large dose of purgative medicine should be given or not. Principal Williams is of opinion "that a violent cathartic should never be given, because the operation of a purgative tends to laminitis, and they generally cause death, when the disease of itself has been of a tractable or even mild form." Other veterinarians are greatly in favour of a good purgative.

If a laxative be given and the constipation be great, enemas of warm water, frequently given, help in a great measure to unload the bowels. The tincture of aconite given in about ten minim doses (Fleming's), and the nitrate of potash in small but repeated doses, or if the pain be very great the tincture of opium gives relief. In laminitis arising from intestinal irritation, bi-carbonate of soda is very applicable. Bleeding either locally or from the jugular vein is practised by some veterinarians, and is believed to have good effects. When bled locally, it is usually done either from the coronary plexus or at the toe. The former is the better place of the two; it gives relief to the congested vessels and consequently to pain. Bleeding from the toe has been tried, but not with such good reults, for it has generally been followed by suppuration and sloughing of the hoof. It is important that the shoes should be removed in the early stage of the disease, the wall rasped down and the feet put into bran or linseed poultices. Hot poultices are in favour with some practitioners, and I am of opinion that more benefit is derived from them than the cold ones. They cause dilatation of the blood vessels, soothe the sensory nerves, and so give relief to pain. They should be kept moist and be frequently changed. Boiled turnips make a very good poultice; they hold a lot of moisture and are very handy, especially at a farm where they are easily procured. Hop poultices are also used. Our Principal in his surgery recommends hot poultices during the acute stages, and cold after the urgent symptoms have passed off.

Cold may be applied to the feet by means of a piece of thick felt, previously soaked in cold water; it should be strapped round the coronet and allowed to hang down over the hoof. Another method is to place the animal in a box, the floor of which has been covered with clay and soaked in water. I do not think this method is to be recommended, although I have seen cases treated in this manner. If the heels are high, they should be lowered, but paring the feet in any other way is apt to do harm.

In some cases the horse is put in slings, but this should not be done unless he will not lie down, for great suffering is caused by compelling him to stand on his already highly-inflamed feet. If the horse cannot be made to lie down, it may be advisable to cast him; if this is done once or twice he will soon find the benefit derived by it, and take the recumbent position himself, only getting up to feed, and that is only for a very short time.

When a patient lies down and will not get up, he must be turned over several times daily; the bedding should be plentiful and kept dry. If there is any difficulty in micturating, the urine should be drawn away by means of the catheter, this adding greatly to the comfort of the suffering animal. The food must be of the simplest kind, such as warm bran-mashes, linseed gruel, and a little hay; some febrifuge medicine may be given in the drinking water. After the acute stage has passed off the amount of food may be increased and a little corn allowed. When the lameness is improved and the febrile symptoms have disappeared, the walls of the feet should be rasped down to allow a certain amount of weight to bear on the sole. Apply a thick bar-shoe, wide webbed, and thinner at the heels and toe than at the quarters, so forming a rocker; this enables the horse to throw its weight on the heels, The thickness of the shoe modifies the concussive shock when the foot is brought to the ground. The shoe should be so fitted that the sole carries a certain amount of the body weight.

If the case is not a very severe one, it may not be necessary to apply a bar-shoe; an ordinary thick shoe, thin at the heels, may answer the purpose. A blister round the coronet is very beneficial in increasing and promoting a healthy secretion of horn.

If the pedal bone has penetrated the sole, it should be covered over with tar and tow, and the foot shod with a bar-shoe and leather sole. When the bone is slightly covered over with horn, the horse ought to be turned out to grass and

allowed to remain there until the horn has gained a proper thickness.

Another mode of treatment for "acute laminitis" is to apply the thick, broad-webbed bar-shoe and compel the horse to walk on soft ground for a short time each day for several days, and give repeated doses of physic. After a time the soreness somewhat passes off and the animal is able to walk better. I have heard of cases treated in this way doing well, but I consider it a cruel method, and when animals do well with the former treatment I do not see why the animal should be walked about in great agony.

Chronic Laminitis.—This form may arise independent of the acute, but it is more often a termination of the latter, and may at any time develop into the acute form from trivial causes.

It is described as that condition of the feet remaining after the febrile symptoms have subsided, the lameness being a result of an altered condition of the foot, rather than of a primary inflammation which by this time has subsided.

Symptoms.—A horse suffering from chronic laminitis will be seen pointing, resting first one foot and then another. The action or gait is also peculiar, for when the horse walks the heels will be brought to the ground first, and the toes are somewhat elevated, the movements are uncertain, and a false step is at any time liable to be made, and the horse fall down.

The feet are flat and the surface of the wall has an irregular appearance, the sole is convex, and the horn is imperfect, constituting a "pumice sole."

Treatment.—This is somewhat like that for the acute, but modified. The horse should be shod with a broad-webbed, thick bar-shoe just as in the acute form, but having in addition a leather sole; the superior surface of the shoe should be well hollowed out so that the pressure is not on the sole.

Horses very lame from chronic laminitis seldom do much good, but as a last resource the operation of neurotomy might be performed.

TUBERCULOSIS IN THE HORSE.

BY E. W. ANDERTON, M.R.C.V.S., MAYBOLE.

THE subject of the above was a valuable Clydesdale gelding, the property of Messrs. Linton Bros., Glenalmond, purchased by them when two years of age. His previous owner and consequently his previous history I am unable to find out.

My attention was primarily drawn to the animal in July of 1894, when I removed some sub-abdominal angleberries which appeared to have kept him from thriving, after which and up to July of this year he did very well.

At the latter date I was again requested to see him. I did so, accompanied by another veterinary surgeon who was with me at the time. We diagnosed pneumonia and laryngitis. The usual symptoms of these diseases were present although his temperature was never throughout his illness 103°. We treated accordingly, giving ammon. carb. balls, belladonna electuary, medicated steam, and counter irritation. The patient ate well, rested perfectly and became very fat, but still no improvement occurred in the lungs, and the larynx got worse. I now ordered hot cloths to the chest and poultices to the throat. This I continued for a fortnight continuing the same medicine. The lungs improved a little, and as the owners were becoming impatient, I removed the hot cloths and stimulated the sides with embrocation. I blistered the throat but with no effect. The breathing became so distressed that a tracheotomy tube had to be resorted to. This I inserted on the 31st of July and through the tube my patient could breathe quite easily. The only medicine he was receiving now and up to his death was Fowler's solution of arsenic in 1 oz. doses twice daily. From the above date I did not again visit him until August 28th, when I found him greatly improved. He had become very fat and his breathing was quite natural through the tube and on closing the tube he breathed quite naturally through his nose, so I at once removed the tube. He had still a hard cough, and on auscultation I found crepitations in some parts, rhonchus in others and patches appeared quite consolidated. I advised my client now to let him take his chance but to continue the arsenic treatment. From that day I never again saw him alive; frequently seeing his owners I heard how he was doing. At first he apparently did very well, so upon fine days he was allowed out to grass. Laterally, however, he commenced falling off in condition and became very weak; the latter he always was, especially for such a big horse. The week before his death, which occurred on October 25th, he did two half days ploughing. This no doubt brought about his death a little earlier than it would otherwise have been. I am told he evinced great abdominal pain, but previous to this there were no abdominal symptoms whatever, his digestion and bowel action being always perfect.

Post-mortem.—On opening the abdomen the immediate cause of death was readily seen to have been enteritis. The great colon was very much inflamed and quite empty; its walls were unusually thickened (about 1 inch), black in colour, and fragile to the touch. At the junction between the folds the tissue was immensely thickened and consisted of a mass of caseating tumours, which I diagnosed to be tubercular, and accordingly sent to Professor Davis of the New College, and I have received word that my diagnosis was correct. These tubercular masses were also found in the stomach and remainder of the intestinal track, although the colon was by far the most affected. The liver, spleen, lungs and larynx were also affected.

TUBERCULOSIS OF THE BOWEL IN THE HORSE.

BY SAM CHAMBERS, ESQ., M.R.C.V.S., HUDDERSFIELD.

ON Friday morning, November 22, a light cart mare, the property of a butcher here, was observed to be in pain, and as it was thought to be an ordinary attack of mild colic, a draught containing ginger oil and warm ale was administered, and as the symptoms showed no signs of abating, I was sent for by telegram in the afternoon. I found her evincing a good deal of pain; pulse 60, temp. 103. There was no tympanites and no sweating; the bowel sounds were entirely absent. No fæces passed during the interval between the time when she was attacked and her death.

The treatment consisted in giving repeated injections of warm water; hot cloths to the abdomen; draughts containing tr. opii, chlorodyne, chloral hydrate, oil. None of these seemed to have the slightest affect in relieving the pain, which gradually became more intense, and she died on the following night.

History.—The mare was at work on the day before her seizure (Thursday), but the owner informed me that she aborted twelve months ago, and since that time she never appeared to be quite herself—sweated readily, had lost her former spirit, and her appetite was somewhat capricious.

She was in foal again.

Post-mortem.—The immediate cause of death seemed to have been peritonitis; the peritoneal cavity contained much fluid, and the membrane itself was inflamed and covered by soft lymph.

The last part of the small intestines was thickened, in some

places enormously so, and, cutting into it, a number of deep and wide ulcerations were found; but beside these actual ulcerations, the mucous membrane was greatly infiltrated with cheesy-looking and, in places, blackened material, which excavated the submucous tissue away from the ulcerations, so that only a small portion of the bowel was really intact. This condition was found through nearly the whole extent of the ileum.

There was a small abscess in one kidney, and, cutting across the liver, I found a small amount of gritty material.

The other abdominal and thoracic organs appeared to be healthy.

A portion of the bowel was sent to Principal Williams, New Veterinary College, Edinburgh, and he informs me that the disease is tuberculosis of the intestine.

MUCO ENTERITIS AND ITS SEQUEL IN A FARM MARE IN FOAL.

BY J. AITKEN, JUNR., M.R.C.V.S., DALKEITH.

On Sunday, the 8th Dec., about 2 p.m, I was called to see the above. On my arrival I found the mare lying in a stable in a very uneasy state. Pulse 70, respirations hurried, temperature 104°. Visible mucous membrane very much injected, particularly the vulva, which was very much swollen, giving one the impression that she was about to abort.

She had been carting turnips the day previous from an exposed field to the pits, and was found badly on going into the stable in the morning. She had not taken her supper, and was purging as if she had had a dose of physic.

I had the mare removed into a loose box, gave her 1 oz. of chloral hydrate with 10 drops of Fleming's tinct of aconite in a quart of gruel (oatmeal). Ordered hot fomentations to be applied to the abdomen by a blanket wrapped round and round. If purging still continued give at midnight 1 oz. of chloral hydrate in a pint of port wine; ½ lb. of mustard to be made up and rubbed on abdomen.

9th.—Saw the mare about 8 a.m. Pulse 85; temperature 104°; breathing quieter; mare had been very restless all night. Chloral and wine given about 2 a.m.; mustard also applied; towards six in the morning, mare gradually became quieter; purging not so frequent.

I tried her with a little tepid water, with 3 drms. of chloral and 10 drops aconite, which she drank readily. Had the

blanket again soaked in hot water and wrapped round abdomen, followed by dry clothing, and ordered a little tepid water to be given occasionally with 3 drms. chloral and 10 drops aconite every four hours.

A purulent discharge escaped from her vagina occasionally.

Saw her again about 7 p.m. Still keeping quieter, although pulse 95; ears and legs very cold; had her legs bandaged with straw bandages or ropes, and dry clothing applied. Noticed her going slightly lame on near hind leg. Owner thought she injured herself when tossing up and down, as she was in many funny positions during nights of the 8th and 9th. I told him I was afraid this might be the beginning of laminitis or founder. Discontinued the chloral, but continued aconite, and allowed her a small quantity of hay, of which she partook.

10th.—Saw her in the morning; was not surprised to find her suffering from severe laminitis as the saying goes. Pulse 90; temperature 105°.

With difficulty got off the shoes; her feet being much grown, had them reduced. When the mare lay down after the exertion, applied hot poultices, gave her 1 oz. of chloral hydrate with 10 drops of aconite, as she seemed in much pain. Left instructions to apply hot water frequently to feet; examined her per vagina, could introduce my two fingers into oss. Told owner she would sooner or later pick foal, but to let nature follow her course.

11th.—Found her standing in usual position in such cases, but did not stand long. Pulse 70; more eager on the hay; allowed her gruel and the aconite as formerly.

No motion in bowels for the last 24 hours; gave Glyster, and still continued poultices to feet.

12th.—Mare still improving: pulse 60; lies most of the day. Outside of elbow and stifle begin to get bruised. Continue same treatment with a little bruised oats and bran.

13th. — Much improved; stands longer; walks badly. Owner thinks she will carry her foal, as no discharge comes and vulva resumed natural appearance.

15th.—Called in the morning; found her lying; owner told me that on entering the box in the early morning, he found the foal behind in its membranes, and, as he said, with a "fresh dose of founder." I told him I was rather pleased she had aborted, as I thought she would improve more rapidly. We continued the poultices till the 20th, when we had them removed, and she walked round the box not so much amiss.

NEPHRITIS IN A MARE.

BY T. O. RICHARDSON, M.R.C.V.S., LYTHAM.

ON November 26th last I was called in to see a brown mare 14.1 hands, 12 years old, belonging to Mr. J. Winderbank, Ship Hotel, Lytham, which the man said was lame in both hind legs. On arrival I had the mare brought out of the stable and saw that she walked very stiffly, appeared rigid about the loins, and turned with difficulty. There was heat and tenderness over the region of the kidneys. The pulse was 52, temp. 102. The animal had a staring coat. There were attempts at micturition, but no urine passed.

On examining the bladder per rectum, it was found to be fairly distended, so a catheter was passed, and about a pint of dark coloured urine withdrawn; this, on being tested with nitric acid and heating, gave a slight precipitate. I diagnosed the case as one of inflammation or acute congestion of the kidneys.

Treatment.—Gave five drachm physic ball, and after having had the legs well rubbed and bandaged I applied hot packs to the loins and warm rugs over all.

November 26th. Symptoms much aggravated, pulse 85, temp. 104. The mare was in much more pain than on the previous day, and kept attempting to roll upon and bite her loins. The urine was small in quantity and contained a large amount of albumen. I examined some microscopically and found red blood corpuscles, fibrinous casts, and epithelial cells.

Treatment.—Tincture opii 1 oz., tincture aconiti Fleming 8 drops in a draught. Also a hypodermic injection of pilocarpine gr. 1½ which caused a profuse perspiration. On seeing her again at night the physic had commenced to operate and the pains were less frequent, and during the day she had eaten a little bran mash.

November 28. She was much the same as on the previous morning, pulse 87, temp. 104·3. The bowels were not acting so freely and no urine had been passed. There was no improvement in the appetite.

Treatment.—Gave another hypodermic injection of pilocarpine and also Ol. Lini. 12 ozs., Tinct. Aconit. F., m. 8. I saw her again at night and she seemed much brighter and had eaten a small mash.

November 29th. She was much better, pulse 76, temp. 103·3, had eaten a mash and some carrots, and had passed urine (which was much clearer), twice.

Treatment.—I again gave Ol. Lini. 12 ozs., and Tinct. Aconit. F., m. 8. At night she was still improving.

November 30th. She was again much better and able to stand firmly, pulse 60, temp. 102. She walked round the box and was eating fairly well. From this date she continued to do well and was out of my hands on December 7th. From November 30th to December 7th, the treatment consisted in looking after the warmth and comforts of the animal and the administration of a laxative.

SARCOPTIC MANGE OF THE OX.

BY W. R. DAVIS, M.R.C.V.S., NEW VETERINARY COLLEGE.

IT is generally held, and indeed authorities state, that sarcoptic mange is rarely, if ever, seen in cattle. Neumann, page 158 in Fleming's translation, has the following:—"Sarcoptic scabies of the ox is only incidentally mentioned here as history is limited to the possibility of its existence. The incomplete, and even inexact, observation of Thudichum relative to the development of scabies in people who had been in contact with a mangy cow cannot be utilized." An account, then, of its indubitable existence will be interesting:

In December last, while at a dairy farm near Edinburgh inspecting pigs, I chanced to go into one of the byres, and opposite the door noticed two cows, the bases of whose tails were perfectly hairless, the skin wrinkled and cracked, and on looking closer patches were seen on the croup, one of them being as big as a soup plate. The patches were raised, and on pressing the margin a felted mass of hair and epithelium came away, leaving a red surface below. On looking over the other cows in the byre, a large percentage of them were found to be more or less affected. On asking the byreman what was wrong with the cows, he told me that they had the "itch," adding that they had had it for months, and that he wished they could get something to cure the cows and himself as well, because he had caught it from them.

On examining the man's arms I was speedily confirmed in the opinion that I had formed as to the nature of the affection, namely, that it was sarcoptic scabies. His skin from the elbows to the wrists was covered with papules, vesicles, and crusts, and as Condy's fluid had been applied curatively, his arms were pretty objects.

He told me that not only himself but all the men about the place had it. On expressing my dread lest there should be an extension to the maids also, I was re-assured on learning that there were no womenkind about the place (the young woman with the milking-pail and the three-legged stool, and a face for a fortune exists for a good many districts in picture-books only). I took a scraping from one of the cows, and on mounting a few particles in glycerine and solution of potash, the acari were readily discovered. They agreed in every detail with the description of a sarcopt —the body ovoid, rostrum short, and two well-rounded cheeks, short thick legs, the posterior ones being concealed beneath the body when the creature was viewed dorsally and also in the disposition of the suckers. They appeared to be for the most part larger than sarcoptes hominis. With regard to the origin of the outbreak there was a mangy horse stabled in one of the byres, but whether he gave it to the cows or whether they gave it to him I am unable to state. The parts affected were mostly the tail and croup flank and neck, and the superior part of the udder in some cases.

By a process of isolation and the energetic application of Vleminck's solution (slaked lime 1, sulphur 2, water 20, boil), to which a little tragacanth was added for the purpose of thickening the liquid, the disease is rapidly dying out. It seems to be much more amenable to treatment in cattle than does scabies in the horse.

Only one of these cows appeared to suffer in general health. This animal was the worst affected of the herd. She had lost her appetite and gave little milk, but showed no emaciation. I saw five other men on the farm whose arms were affected like the byreman's already described.

It is stated that there are many byres round Edinburgh where a similar disease exists among the cows, but so far no other outbreaks have been observed in the practice of this College. Some years ago I had experience of two perfectly similar attacks of mange in cows, but on those occasions I did not look for the acarus.

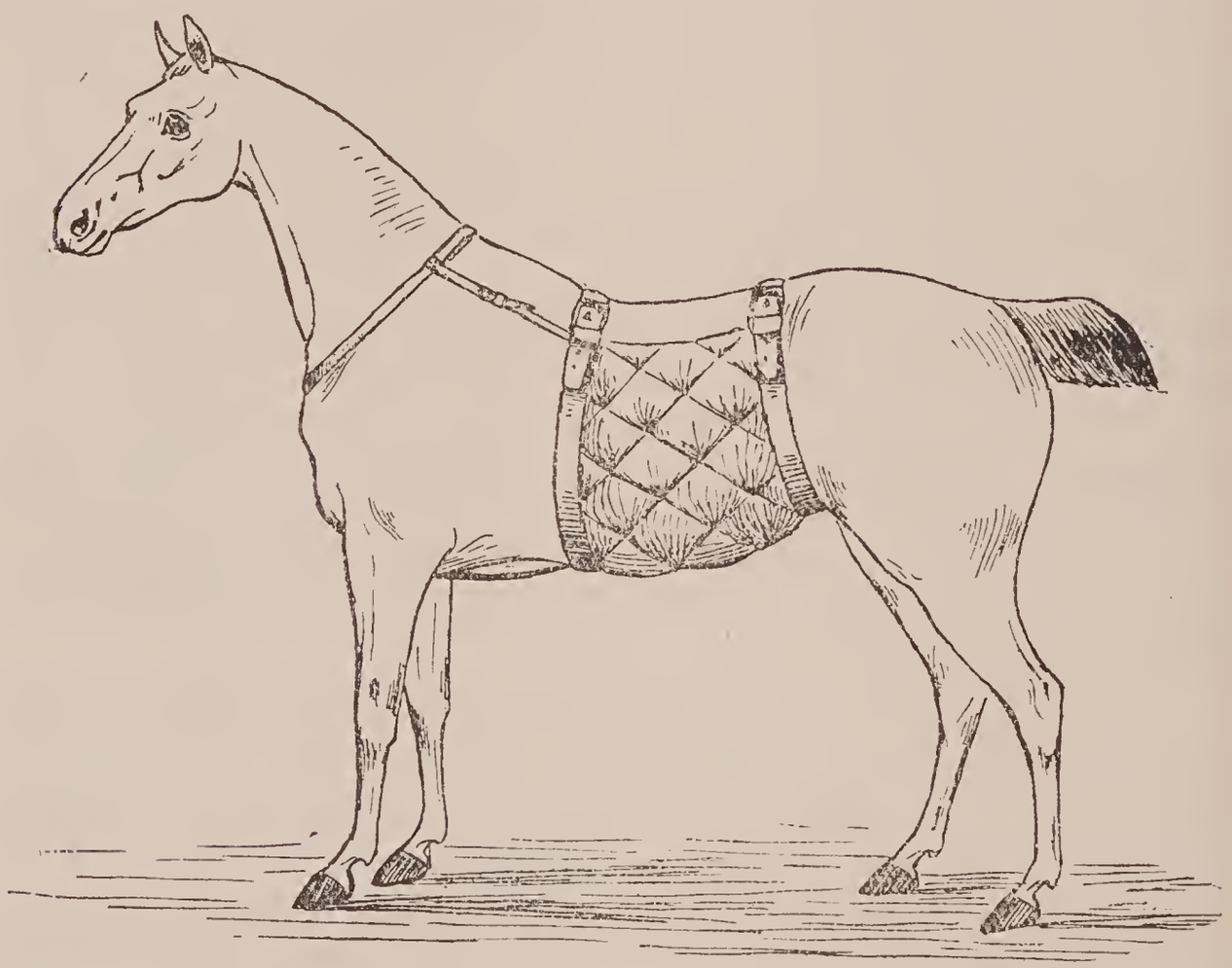
HEATED SALT FOR THE RELIEF OF ABDOMINAL PAIN.

BY HENRY C. WILKIE, F.R.C.V.S., F.Z.S.

THE application of continued heat for the relief of certain kinds of abdominal pain is, I think, often of great value, and would, perhaps, be more frequently resorted to were it not

that the usual method of obtaining it—by hot water—is unsatisfactory, and difficult to carry out with any thoroughness. Common salt retains heat for a considerable time, and is quite the best readily-obtained material which can be used for the purpose. I have found the application of this agent an easy matter, and in many cases of great benefit, particularly in pain referable to the large colon, or to the stomach, in foals.

With these patients, particularly, it does not seem quite admissible to administer frequent doses of sedative medicines if this can be avoided, and in very early life I think it would



be difficult to say what sedative we can give with perfect safety in a case in which pain is violent and more or less present for twenty-four hours or more.

The salt, well dried, is put into two calico or canvas bags to form a layer, when spread out, of from half-an-inch to an inch in depth, and the mouths of the bags are sewn up.

Diagonal seams are then sewn through both sides of the bags, and through the salt, in opposite directions, so as to form little closed diamond-shaped pockets, each holding a small portion of the salt. This prevents gravitation, and insures an equality in the layer of salt throughout the extent of the bags.

One of the bags is then placed in an oven, and when sufficiently heated, is taken out and placed at once round the abdomen, and tied rather tightly over the back.

A collar is then readily contrived, with strong webbing or straps, to run from the neck to the top of the bag on each side, and another piece runs from the bottom of the collar, between the fore legs, and is attached to the middle of the bag on its front edge. These fasteninge prevent the salt bag slipping either backward or round, which if carefully put on, is held close up to the body, without much chance of movement.

In some cases, from the conformation of the body, the bag will have a tendency to shift forwards, and in these a crupper is put on. I have seen considerable relief obtained in this way, and much valuable time gained, while, what is very important with foals, the animal's energies are not rapidly exhausted. In older animals, the application is made in the same way, but the fixings require to be of a stronger character, as it is most important the salt bag should be close to the body, and practically immovable. I enclose a sketch of the bag applied to a mare, which shows a method of fixing the application, by permanently arranged straps.

The weight of a bag of salt of this kind requires some regulation, as it is easily made too great, and the thinner the layer of salt, the closer the diagonal seams require to be, and the more frequent the changing of the bags.

A piece of mackintosh cloth laid over the bag when on, is of service in diminishing the loss of heat.

CYSTIC TESTICLES IN RIGS.

BY T. M. INGLIS, ESQ., M.R.C.V.S., FORFAR.

It is quite common to find retained testicles diseased, but as I have had two in one week affected very similarly, I should like to record them.

The first case was that of a colt two years and five months old. After casting and incising the ring in the usual manner, I introduced my hand, and with much difficulty found the testicle, which was lying against the right kidney; it appeared extremely large and was soft.

I brought the cord out first (double), and pulled gently with the one hand, then pressed my hand in between the testicle (which the traction had now brought to the abdominal ring) and the ring, and so manipulating it,

managed after some time to get it out. The cord was very long and strong, and the testicle was quite as big as an ostrich's egg. After suturing, I allowed the colt to rise, but he was not many minutes up when a large portion of the small intestines came out between the stitches and hung down about 18 inches.

I immediately cast him again, washed the intestines with antiseptic fluid, and after reducing the protrusion restitched the wound, allowed him to rise and kept him very quiet. He completely recovered in a fortnight. The vaginal sac contained a large quantity of fluid and a very imperfectly developed testicle. The second case was that of a colt sixteen months old. With this one I had not nearly so much difficulty, as I readily found the testicle which was lying in the pelvic cavity beside the bladder. It was very much smaller than the former one and therefore did not offer so much resistance when getting it through the ring. This colt also made a perfect recovery. I sent the cyst to Principal Williams and he informs me that it contained $4\frac{1}{2}$ ozs. of serous fluid and an atrophied though apparently normally constructed testicle.

CHOKING IN A PONY.

On Friday I received telegram—"Come at once, piece turnip in pony's throat." On my arrival there I was told it had gone to farm-yard where trough is kept with pig's meat —boiled turnips, barley, etc.—took a bite of par-boiled turnip, gave a scream, ran back, and made frequent attempts to vomit. This continued for four hours before message came. I found pony making frequent attempts to eject obstruction; could find no trace of obstruction from usual manipulation. On pressing larynx caused great pain. Examined mouth carefully with mouth-piece, but could find nothing. Gave a little linseed oil. He gave a cough, and on his head being let down, the oil came pouring from his nostrils, symptoms being much aggravated. Again I examined his mouth with no result; waited a little; again gave oil with the same result. After the acute symptoms passed away, I let him have a little hay, which he chewed in a half-hearted fashion. He then made an attempt at swallowing but failed, again bringing on the choking sensation. After that subsided I gave him more oil, with the same result, showing that the obstruction still existed. Then

I put on a muzzle and left him, with instructions that he was to be looked at during the night.

On visiting him next morning, removed muzzle; he drank a little water; a bite of hay was given him, which gave him pain when swallowing, but there was no choking. He then ate a bran mash quite heartily.

SWINE FEVER.

ON 21st January, 1896, a largely-attended conference took place in London between Mr. Long and the representatives of local authorities in England and Scotland with reference to swine fever. The object of the meeting was to enable the President of the Board of Agriculture to ascertain the best opinion from the different local authorities as to the practicability of placing some check upon this epidemic. After the preliminary statement of Mr. Long, several of the representatives present put forward the opinion that the Board ought to revert to the former system of allowing local authorities to deal with the disease, the cost of compensation to be borne as at present by the Imperial Government. It was the feeling of a considerable number of those present that this was a most useful suggestion; but Mr. Long promptly interposed a barrier to its further debate. He said he could not ask Parliament to give effect to such a proposal, as the responsibility must rest with the central board in London. This strong expression of opinion had the effect of narrowing the discussion, and it appeared that very few of the delegates had any other definite scheme to put forward. Mr. Dobbie, of Midlothian, in the course of some remarks, in which he criticised the system of inspection practised by the Board of Agriculture, suggested that licenses should be insisted upon for all pig-styes, and that there should be the power to destroy, as well as to cleanse, infected piggeries. Mr. Long pointed out to him that the power to destroy already existed, but with regard to licenses he said nothing. One or two of the delegates argued that the payment of compensation has a mischievous effect, and ought to be discontinued. That view, however, found very little support, and at the end of the interview Mr. Long, in thanking those present for their attendance, stated that he viewed such a suggestion with disapproval, and would certainly adhere to the present system of compensation for the animals slaughtered.

NOTE ON AN ANATOMICAL PECULIARITY IN A DONKEY.

BY O. CHARNOCK BRADLEY, NEW VETERINARY COLLEGE, EDINBURGH.

WHILE dissecting the posterior anti-brachial region of a donkey recently a student came across what struck him as being an unusual arrangement of the muscles, and immediately called my attention to it. On completing the dissection,

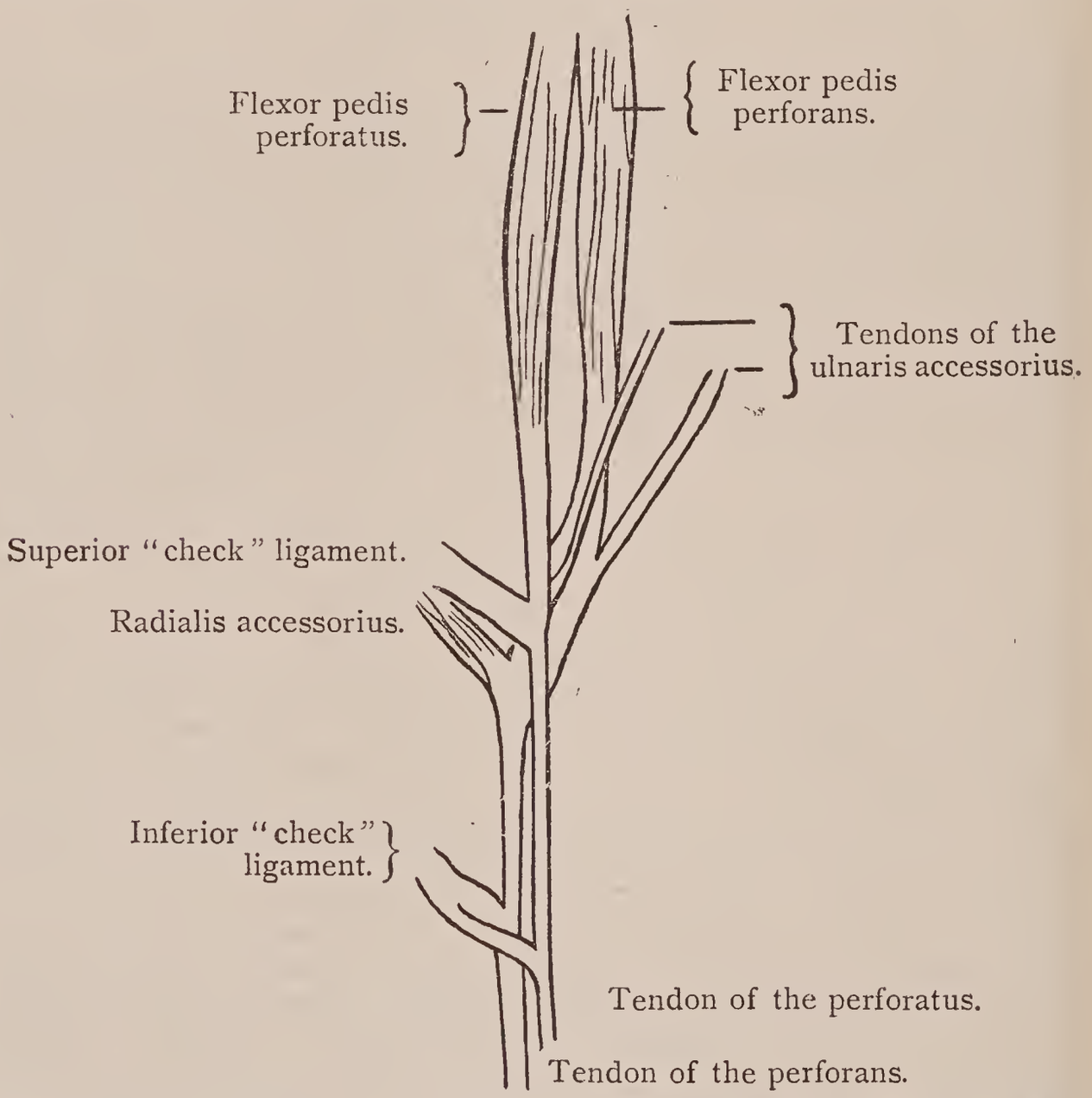


DIAGRAM OF THE STRUCTURES VIEWED FROM THE INSIDE OF THE LIMB.

the following rather interesting peculiarity revealed itself:—The ulnar portion of the Flexor Pedis Perforans (also known commonly as the *Ulnaris Accessorius*) was provided with two tendons, one of which was thick the other thin. The thicker tendon joined that of the perforans in the usual place, the thinner one joining the *perforatus* tendon just above the carpus, and opposite to the attachment to this tendon of the superior carpal or "check" ligament.

The Radial portion (*Radialis Accessorius*) of the Flexor Perforans, and the Superior Carpal Ligament were disposed in the usual manner, but the Inferior Carpal Ligament was attached to both perforans and perforatus tendons, the portion blending with the perforatus being much smaller than that joining the perforans.

In a second donkey, which we were fortunate enough to secure for dissection, the Ulnaris Accessorius was perfectly commonplace, having only one tendon, and that joining the perforans; the Inferior Carpal Ligament, however, joined the perforatus tendon (as well as the perforans) from both the inside and the outside, whereas in donkey No. 1 this structure joined the tendon from the inside only.

Reference to the diagram (of the first case) will probably make this description more clear.

I should esteem it a favour if those who have dissected the donkey frequently would let me know if they have ever found a case similar to the above, or any deviation from the usual arrangement in this part of the body.

TUBERCULOSIS OF THE DOG.

BY W. R. DAVIS, M.R.C.V.S., NEW VETERINARY COLLEGE.

In view of the fact that tuberculosis of carnivora is seldom alluded to in works on pathology (a recent text-book on the subject in the description of tuberculosis of animals omits this species altogether) it becomes important to record cases of this disease in dogs and cats when they are met with in practice. On the 6th January a lady brought a toy terrier to the College for treatment. She stated that the animal had been alright up to about two months previously, when it was noticed to have some difficulty in swallowing, held its head and neck to one side, moved stiffly, and had a cough; the appetite disappeared, and the animal became emaciated. When examined on the date mentioned, the dog was found to be very thin, the breathing was abdominal, and pressure in the intercostal spaces caused pain. Percussion and auscultation showed well-marked pleurisy, with effusion. The larynx seemed unduly prominent, but nothing abnormal could be detected on an examination from the mouth. The owner's idea was that the dog had swallowed something which had stuck in the throat, and that this was the cause of its illness. The larynx was very sensitive, and pressure on it caused à good deal of pain.

After keeping the dog under observation for a few days in the college kennels, the owner was advised to have the animal destroyed, for from the history of the case, from the long illness and gradual emaciation and from the condition in which the little patient then was, it was felt that we were only anticipating its death by a few weeks. The real nature of the disease was, however, only revealed at the *post-mortem* examination. The animal was poisoned by a few drops of Scheele's prussic acid. The thorax contained seven ounces of clear serum. The costal pleura on both sides was studded over with innumerable tubercles. Both lungs were bound to the chest wall by numerous adhesions, the pulmonary pleura was covered by tubercles as also was the pericardium. The bronchial glands were converted into a huge caseous mass which at first was mistaken for the heart; the mediastinum was very greatly thickened and infiltrated with tubercular deposit. The diaphragm was of great thickness and both on its pleural and peritoneal surfaces was covered by miliary tubercles. In the abdominal cavity the great omentum mesentery, parietal peritoneum, folds to the bladder, the surface and parenchyma of the liver and to a much less extent the spleen and kidneys were packed with tubercles. In the great omentum the distribution of the process by the blood vessels was beautifully shown. The brain was examined but no trace of the disease was discovered in this organ or in its coverings.

The inability to swallow or the difficulty in doing so was due to pressure on the œsophagus by the mediastinum and bronchial glands.

Sections of the liver stained in the usual manner by carbol fuchsin showed the tubercle bacilli in great numbers.

This is the third case of generalised tuberculosis of the dog which has been met with in this practice in little more than a year, and there has been one case of phthisis in the cat during the same period.

When we consider the manner in which pet dogs and cats are often treated (fondled and kissed and even allowed to eat off the same plate as their owners), it is apparent that tuberculosis, when it affects carnivora, is extremely likely to be a source of contagion to human beings, and it becomes our duty to insist on at least its occasional, if not on its frequent occurrence in dogs and cats.

A VETERINARY CATECHISM.

WE have been favoured with a proof-sheet of a Catechism which, we learn to our great astonishment, is to be shortly issued by the Animals Department of the Board of Agriculture. We append a note of some of the questions and answers

Q. What is the Animals' Department?

A. The sublimated essence of wisdom, skill, and prudence.

Q. Who is the visible embodiment of this wisdom, skill, and prudence?

A. The presiding genius of the Department is one who by his intimate acquaintance with veterinary medical science is competent to decide all difficult and complicated questions relating to the treatment of domestic animals.

Q. What proofs are to hand of his fitness?

A. All good and loyal citizens take these things for granted, asking no questions.

Q. What are the principal functions of the Department?

A. These are manifold and intricate, and, for the greater part, quite beyond the comprehension of practitioners and stock-owners; it is, therefore, profane to try to comprehend the incomprehensible.

Q. Are all the proceedings of the Department equally inscrutable and incomprehensible to the ordinary man?

A. A sacred mystery surrounds their words and deeds, and it is highly improper and even wicked to attempt to penetrate this mystery.

Q. Must, then, the practitioner and stock-owner accept without hesitation the dicta of the Department on all points?

A. They must do so, and allow no scruples to interfere with the performance of all duties prescribed by the Department.

Q. But what must the practitioner do who finds the utterances and edicts of the Department inconsistent and contradictory?

A. He must first learn that no utterances of the Department can by any possibility be inconsistent or contradictory; he must treat all such unholy thoughts as the suggestions of the devil; he must subject himself to a long course of fasting and penance, in the hope of reconciling himself to the decrees of the Department; finally, he must choose between reconciling the apparently irreconcilable, at all costs, and resigning his diploma.

Q. What must the practitioner do who finds the decrees of the Department inconsistent with the teachings of science and with the statements contained in accredited text-books?

A. The practitioner will have no difficulty whatever if he reason correctly and think rightly. As the Department cannot err, any statement contained in text-books must necessarily be false and heretical, and must therefore be rejected as being not only absurd but likewise damnable.

Q. What is the plain duty of practitioners when they find themselves thus embarrassed with heretical doctrine?

A. Their duty is to denounce their false teachers and to send all text-books whose doctrine differs from the decrees of the Department to London, in order that they may be burnt by the common hangman.

Q. Can you find any historical parallel to the Department?

A. The best historical parallel is the Holy Inquisition, which did so much to stamp out heretical opinion and purify the moral atmosphere.

Q. Can you mention any detail of the work of the Department which comes within the grasp of the veterinary practitioner?

A. One is the definition of swine fever.

Q. How is a stock-owner to proceed when he sees his swine sickly and suspects this disease?

A. He may, if he likes, ask a common veterinary surgeon to give an opinion.

Q. Then, by way of appeal to a higher authority, what must he do?

A. Ask a policeman.

Q. And when the policeman has gravely and attentively considered the case, as only a policeman can, what is next to be done?

A. The policeman must wire to the Department, giving his opinion and asking for instructions.

Q. What is to be done with this telegram?

A. It will be sent to the youngest fledgling in the Department who will at once instruct a veterinary surgeon, a stranger to the place where fever is suspected, to examine the swine, alive or dead, always, of course, in consultation with the policeman, who represents, here as ever, the majesty of Government, and send the viscera to the Department for examination by the Infallibilities. These will, in the fulness of time, give their verdict and publish their orders.

Q. Why should the Department naturally entrust to its youngest clerk the delicate duty of selecting a consultant surgeon?

A. Because ignorance is always synonymous with impartiality.

Q. Is an intimate acquaintance with the locality in question an indispensable qualification for the Department official who deals with the case?

A. On the contrary, it is, as already indicated, a disadvantage. The less he knows about the locality and the case the better. Let him trust entirely to the inspiring influence of the Departmental atmosphere, and he will infallibly judge correctly and without bias.

Q. Will the surgeon first consulted by the owner of the swine have any just cause for complaint that he has been ignored?

A. None whatever. If he should grumble he gives evidence of vanity, conceit, and presumption. It is the paramount duty of the Department to check such evil tendencies and to inculcate humility on all veterinary practitioners.

Q. But if the surgeon first consulted was the regular surgeon of the stock-owner and was acquainted with the details of the stock, has he even then no cause for complaint? Or, supposing he is considered by his fellows infinitely superior to the second?

A. None whatever. From the lofty point of the Department all veterinary surgeons are alike—mere worms crawling in the dust. Mere professional or local differences in point of character and capabilities are quite invisible to the Department.

Q. Has the Department any special aim in view when it thus subdivides the work of veterinary surgeons?

A. Yes, it has in view the circulation of the wealth of the country, that is, the compulsory spending of money—whether to good purpose or not, is not the concern of the Department. Further, it has in view the distribution of that portion of the national wealth which naturally goes to veterinary men over as large a surface as possible.

Q. But if veterinary men answer that their share of the national wealth is already so meagre that it will not bear subdivision, what is to be said?

A. Simply this, that the Department has, far superior to its scientific and administrative purposes, a moral purpose in view. Let veterinary men acquire and practise the virtues of thrift, patience, and self-restraint, and they will be quite happy.

Q. Will this action on the part of the Department tend to promote friendly feeling among veterinary surgeons?

A. Yes, by mixing them all up indiscriminately it will teach Christian charity and forbearance, and show them the importance of union. [We feel inclined to italicise the last clause.—EDITOR, V. J.]

COMMUNICATED.

BOARD OF AGRICULTURE.

Annual Reports of Proceedings under the Contagious Diseases (Animals) Acts. Markets and Fairs (Weighing of Cattle) Acts, etc., for the year 1894,

THIS is a most interesting and valuable compilation. In it the Chief Veterinary Officer, Mr. Cope, and the "Principal of the Animals Division," Major Tennant, strive, with acknowledged ability, to educate all whom it may concern in the history, prevalence, and "administrative" treatment of contagious diseases in general, and of swine fever and anthrax in particular, in the United Kingdom for the year 1894.

With its 142 pages of letterpress, and its six beautifully-coloured full-size and full-page drawings, with its two interesting and very distinctly-marked maps, showing the "swine fever and rabies outbreaks reported in Great Britain," together with its carefully-compiled statistical tables, etc., this Report might well be mistaken for a Journal of Morbid Anatomy and Pathology, or by the colour of its cover—a small Parliamentary Blue Book. The Report is presented by "Command of Her Majesty to both Houses of Parliament," it doubtless is in the hands of every lay and travelling inspector, in the hands of county councils and constabulary, etc., proving a source of most valuable information and instruction to them; and it might have been a gracious and gratifying and friendly mark of recognition had a copy been placed in the hands of every M.R.C.V.S. in the kingdom—their number is not large, and their past services surely merit it. However, the price is only 1s. 4d. from any bookseller. It should be in the hands of every veterinary practitioner—perusal will well repay the cost.

The Report of the Chief Veterinary Officer is placed first. The opening sentence is already well known, and has been remarked upon. "After struggling for years . . . at no previous period have the live stock of this country been so free from these specific affections as at present"; and then follows "the well merited compliment to the Veterinary Inspectors at the ports" for the performance of their "most re-

sponsible duties." Every one rejoices at the freedom of the country from contagious disease, and joins in thanks and congratulations to the Port Inspectors; but, in common justice to the profession which gave him birth, the Chief Veterinary Officer should have added, "At no previous period have the members of the veterinary profession been so snubbed and set aside; at no previous period have more degrading duties been assigned them; at no previous period have their official fees been less; and never in the past have they been so superseded by lay inspectors and policemen as at present."

The one statement is just as true as the other. The veterinary profession have aided well and fought long in the struggle against contagious disease; and in this Report there is not, so far as I can see, one word of recognition nor thanks for their serivces. It would almost appear that here, as elsewhere, the veterinary officers of the Board cannot get beyond their own Department and their own men. Are they bound with official chains?

Swine fever, and the illustrations of its morbid appearances, occupy from the fourth to the fifteenth page. In the opening paragraph it is stated that, "During the whole of the year a very large part of the time of the veterinary officers has been devoted to the examination of the viscera of pigs slaughtered under the provisions of the Swine Fever Act of 1893." Possibly too much of their time, to the exclusion of other and more responisble duties, which have been delegated to other and less competent hands.

"Immediately on the receipt of information of an outbreak or supposed outbreak of swine fever, a telegram is sent to a veterinary surgeon residing in or near the place where the disease is reported, requesting him to visit, and report, and examine the diseased or suspected animal; and if he considers there are sufficient indications of swine fever, he is authorised to slaughter it and forward the viscera to the Board Laboratory in London." This sentence (also in the first paragraph), I cannot understand; from my own experience it is simply not true, and the same we are inclined to believe may be said of another sentence on p. 66, in the Report of the Principal of the Animals Division, par. 2, line 10: "If the local veterinary surgeon has confidently decided that swine fever did not exist, the restrictions imposed on the premises have been at once removed."

During 1894, from June to December, there occurred in this district at least twelve severe outbreaks of swine fever in two clusters of piggeries, embracing more than 800 pigs.

Notice of each of these outbreaks was at once and promptly sent to Whitehall Place, London, and in not a single instance was a telegram sent "*immediately*" to a veterinary surgeon residing in or near the affected districts, and in no instance whatever was it left to a local veterinary surgeon to decide whether swine fever did or did not exist; the viscera were invariably forwarded to London for the decision of the Board's veterinary advisers.

I have known two full days elapse before the waterproof bag and accompanying instructions reached the veterinary surgeon residing in or near the place. I have known the local veterinary surgeon time after time report the existence of disease, and time after time his telegrams and himself were ignored, and other professionals sent from three, five, and seven miles distance, often days afterwards, to pick up his cases. I remember finding a couple of cases neglected by the Board one Monday—dead carcases were thrown on the dunghill, and diseased pigs lying all over the place. I sent an urgent message to Whitehall at once, and on the Friday, no veterinary having been sent, things were as they were and far worse; and how in the face of such occurrences in 1894 the chief veterinary inspector can publish the statement—"Immediately on receipt of information . . . a telegram is sent to a veterinary surgeon residing or near . . ." I cannot make out, and my little experience coincides, I make bold to say, with that of the vast majority of veterinary surgeons residing in or near the places where the disease has been known to exist.

That the Board of Agriculture has failed to cope with swine fever; that many outbreaks have been shamefully neglected; and many so called attempts at suppression proved abortive; that prompt and effectual stamping out has not been energetically put in force, but miserably imperfect isolation substituted in its place; that lay inspectors and constables know little of the disease, and often care less; that the system of cleaning and disinfection carried out under their instructions is frequently little short of farce and a sham, and a shame and disgrace to the Board which employs them—are matters well known to the profession at large; but of this there is not one sentence in this Annnal Report, only some very interesting and valuable notes on the nature and symptoms and appearance of swine fever, which any veterinary surgeon may read with profit and pleasure. The number of *post-mortem* examinations during 1894 is given, leading to the conclusion that the

disease is more prevalent during the summer than the autumn months, a statement not invariably warranted. The disease is described as of two kinds: "1. Ulceration; and 2. Diphtheritic exudation," and as occurring in two forms, viz., "the acute and fatal, and the chronic or mild." The illustrations are really beautifully executed (far too much so, surely, for members of parliament and county councillors), there are also some excellent notes on other diseases of pigs which have been the "subject of veterinary examination on behalf of the Board."

A page is devoted to verracose-endocarditis of swine, accompanied by a very clearly-defined drawing; and it is remarked that Continental authors have observed this morbid condition as often associated with swine-erysipelas, which, again, is described as a disease of low infective power, which appears to be more common on the Continent than in this country. Apparently, the attempt to class swine-erysipelas as a contagious disease alongside swine-fever has not found countenance.

Pleuro-pneumonia and foot-and-mouth disease and rabies are touched on briefly. Anthrax has many pages devoted to its consideration, several reports by French, German, and Continental veterinarians being given in full. Farcy, and glanders, and mallein are passed in review, but nothing as yet appears as to tuberculosis and tuberculin. Surely the time has arrived for the consideration of the latter by the Board of Agriculture.

The Report of the Principal of the Animals Division may be passed over without much comment. Why Major Tennant should be Principal of the Animals Division, or why his staff of district inspectors and assistant inspectors should supersede veterinary surgeons in the suppression of contagious disease, is what we veterinarians in practice fail to understand. These men are simply veterinary surgeons in all but the name—doing the work veterinary surgeons, as inspectors, formerly performed, and doing it far less intelligently and effectually, but at infinitely increased cost to the country. The Principal of the Animals Division has probably discovered ere this that the "administrative treatment" of swine fever requires more veterinary knowledge than he or his staff are in possession of. His "isolation theory" has long ago been exploded in practice. He tells us in his Report that during the months of August, September, October, November, and December 28,320 pigs were kept isolated, and that of these only 294 died during the month. Does this retired military gentleman

think that during the months these 28,320 pigs were kept isolated, they did no harm? What of the cases that did not die, but lived for three or four months, and infected others so soon as the restrictions were removed? To my knowledge 100 pigs were isolated in this district, by orders of the Department, for three weeks in July and August, 1894, and the result was the creation of at least eighty cases of swine fever, and an unbroken chain of nine outbreaks of the disease thereafter. One case of swine fever left is quite as dangerous a centre of infection, as one case overlooked of pleuro-pneumonia. Long ago I found, from personal experience and contact, that this Principal did not know much about a cow. And with every feeling of respect and goodwill, I am just a little afraid that he does not know even yet too much about an animal of the porcine species.

It only remains to be added that, in this Annual Report for 1894, "The Diseases of Animals in Foreign Countries" occupy a few pages, while the statistical tables relating to "Foreign Animals," and "International Trade in Animals," make up the remainder of a volume which every practitioner should buy and peruse.

SLATEFORD, C. CUNNINGHAM, M.R.C.V.S.
January 25th, 1896.

Editorial.

THE mountain was in labour and brought forth—not even the traditional mouse! On Tuesday, the 14th January, 1896, representatives from the local authorities throughout England and Scotland assembled in London in large number, at the request of the Minister of Agriculture. The sole object of the meeting was to confer with him and give their opinions as to the means best calculated to diminish the swine fever that is at present raging amongst swine in Great Britain. The failure that has resulted from the system of operations with that end in view which has been in force for the past two years has doubtless caused great alarm to the Government. We regret, however, to notice that the proposals made by the speakers who represented local authorities were not entertained by Mr. Long. It seems quite clear, from statistics already to hand, that the present centralising system has completely failed; consequently decentralisation, or, in other words, an increase in the powers of local authorities with the object of enabling them to deal more promptly

than at present with outbreaks of fever, was the course proposed by the majority of the speakers at the meeting on 14th January. Some members of the deputation advocated no compensation—a somewhat harsh suggestion, as we think. Mr. Long's reply gave no uncertain sound; he emphatically rejected the proposals made to him by the meeting, and refused to make any change in the present arrangements. This refusal on the part of the honourable gentleman to reconsider the action of the Government was a bitter and a startling disappointment to the deputation, and it has given a painful shock to stockowners throughout the whole country. The question under discussion is a vast and important one, affecting as it does the value of the swine species of farm-stock to the extent of many thousands of pounds annually, and it has now reached an acute stage. Something must be done, and that soon, to remedy the present condition of affairs, unless we wish to see our stock of swine disappear altogether, and the measures to be taken must be prompt and thorough. One of the great defects of the present arrangement is that it is so cumbrous and involves so much delay. Infectious disease is like fire: if attacked early it is easily overcome, if neglected it may gain such a mastery that nothing will stop its progress till all that is consumable is consumed. Experiments made by distinguished veterinarians in this country and abroad have shown that swine fever is a specific disease due to a microbe, that it is easily inoculated and spreads with great swiftness, and that it may prove rapidly fatal. This last fact is the vital point of the whole matter and to it public attention must be directed, on it public attention must be kept fixed till a remedy is found. We must not stand by with folded hands and let our stock of swine perish before our eyes, whilst dilettante officials are making hopeless and heartless efforts to cope with what is in sober truth a national misfortune.

We are in receipt of communication from Mr. J. Spreull, M.R.C.V.S., Paris, which will be reviewed in our next issue.

THE JUBILEE SCHOLARSHIP FUND.

We have been asked to intimate to members of the profession who have not yet subscribed to the above, that donations will be received and acknowledged by the Hon. Treasurer, Mr. F. W. Wragg, 17, Church Lane, Whitechapel, E., until March 31st, when the fund will be closed.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS, DECEMBER, 1895.

THE *Written* Examination in the various classes was held on Wednesday, December 11th, in London, at the Examination Hall, Royal College of Physicians and Surgeons, Victoria Embankment. The Oral Examinations at a meeting of the Court of Examiners, 10, Red Lion Square, on and between 18th and 20th, and the Practical portion of the Final Examination and Class B. at the Royal Veterinary College, Camden Town, on and between December 18th and 23rd.

The following students passed their examinations:

Final Examination.

Mr. Thos. McCaffery	Mr. G. Dunne
,, H. Barnard	,, G. Elmes
,, L. Barnard	,, T. S. Grove
,, W. R. Clarke	,, W. G. Gillam
,, R. G. Gillard	,, A. R. Grimes
,, E. L. Stroud	,, W. Golding
,, J. P. Murphy	,, F. B. Hodgkinson
,, W. A. Bull	,, R. F. St. Clair Houston
,, H. H. Nicholls	,, A. O. Johnson
,, G. H. Parr	,, H. A. Idenden
,, A. L. Farrant	,, E. W. Parks
,, J. A. Moffett	,, S. W. Pratt
,, C. E. Parker	,, J. Pugh
,, P. Duffy	,, C. Peirce
,, H. P. Hogben	,, Robt. Platt
,, W. Beddard	,, B. Sumner

Mr. G. Watkins.

Second Examination.

Mr. E. Fenner	*Mr. H. Milton
,, W. G. Green	,, C. J. Sanderson
,, R. C. Cochrane	,, G. P. Knott
*,, E. T. Ensor	*,, C. M. Park
,, F. C. Hobbs	,, J. B. Walker
,, A. S. Head	†,, W. M. Williams

Mr. B. Young.

First Examination.

Mr. H. S. Elphick	Mr. F. H. Ingersoll
,, H. W. Fernandes	,, C. H. Jolliffe

Mr. J. P. Stableforth.

ARTHUR W. HILL,
Secretary and Registrar.

Those marked * thus passed with 2nd Class Honours.
Those marked † thus passed with 1st Class Honours.

The Examinations in Scotland.

At meetings of the Board of Examiners, held in Edinburgh and in Glasgow on and between December 11th and 17th, the following gentlemen passed their final examination and were admitted members of the Royal College of Veterinary Surgeons.

DICK COLLEGE.

Mr. D. Bolton, Athlone
„ J. H. Carr, Kingstown
„ J. J. Edgar, Elgin
„ P. M. Edgar, Daventry
* „ F. G. Edwards, Chester
„ S. W. Haffield, Kingstown
„ J. C. Heather, Newry
„ N. Irvin, North Shields
*Mr. G. Moir, Clany
„ A. J. Sellars, Manchester
„ Mr. J. M. Sinclair, Moy
* „ J. M. Watson, Kirkcudbright
„ F. S. Clay, Nuneaton
„ J. H. Conway, Cookstown
„ A. M. MCclew, Portpatrick
„ T. K. Ramsey, Dublin
E. Moynahan, Cork.

NEW COLLEGE.

Mr. W. Broomhead, Sheffield
„ T. Bowlas, Blackpool
„ J. C. De Ville, Uttoxeter
„ A. Ferens, Durham
„ J. E. Hardie, York
Mr. R. H. Knight, Bolton
„ R. Rawlins, Chesterfield
„ A. O. Hughes, St. Asaph
„ J. T. Allen, Derby
„ J. McPhail, Edinburgh

GLASGOW COLLEGE.

Mr. G. Mayall, Mossley
„ J. M. Sterling, Kippen
* „ A. S. Adams, Glasgow
Mr. J. Paton, Perth
„ D. Wyllie, Ayr

Those marked with an * being under the required age have not been allowed to register, and their diplomas have in the meantime been withheld.

The following gentlemen passed their second examination :—

DICK COLLEGE.

Mr. M. Allan
„ D. C, Barmingham
„ B. S. Cockerton
„ S. Craig
„ J. Dixon
„ C. Goundry
„ J. Grant
„ T. F. Hall
„ J. A. Hewson
* „ J. E. Holroyd
„ A. F. S. Jackson
Mr. P. J. McCloghry
„ F. J. Pringle
„ J. Robertson
„ A. Scott
„ R. C. Smith
† „ R. Wall
„ T. Wilkinson
* „ A. J. Williams
„ J. B. Kay
„ E. Launder
„ H. Leyshon

NEW COLLEGE.

* Mr. A. P. Beesley
† „ J. D. Knowles
* „ J. H. Lomas
„ A. Lawrie
„ M. J. Mitchell
Mr. A. J. O'Leary
* „ R. D. Williams
„ R. J. Bailey
* „ H. A. Ferguson

GLASGOW COLLEGE.

*Mr. H. G. Simpson
* „ D. Jack
„ J. Reynard
„ E. P. Jenkins
„ J. McIntyre
Mr. W. Crawford
„ W. Kilpatrick
„ D. Walker
„ A. Fraser
* „ H. O'Neil
J. Crawford

Marked thus * passed with Second Class Honours.
Marked thus † passed with First Class Honours.

The following gentlemen passed their First Examination.

DICK COLLEGE.

Mr. J. Cowan	Mr. A. Newell
,, P. Donovan	* ,, J. J. O'Connor
,, W. Lawson	,, E. O'Neil

NEW COLLEGE.

Mr. D. McDonald	Mr. W. F. Wilson
	C. R. Twist

GLASGOW COLLEGE.

Mr. E. Souter	Mr. J. Baird
,, A. M. Spittal	,, J. P. Small

R. RUTHERFORD, F.R.C.V.S.,
Secretary to the Board of Examiners.

Edinburgh, *December 23rd*, 1895.

TORONTO COLLEGE, CANADA.

Donald Currie	Angus McDonald
Francis Duncan	John J. McGregor
John M. Farquhar	Arthur E. Miller
Truman Earl Gore	James H. Powers
Cecil Howell	David D. Reid
John S. Jones	W. J. Rouse
R. L. Kann	D. H. Super
A. A. McArthur	Jacob Wagner, jr.
Allan McDonald	E. C. Wisman

Primary examination:—Passed in anatomy: Messrs. George, Hamilton, and Lewis.

ROYAL COLLEGE OF VETERINARY SURGEONS.

LIST OF NAMES of members to be removed from Register through non-compliance with section 5, sub-section 4, of the Veterinary Surgeons' Act, 1881:—

Ackroyd, Edward Lee, Nottingham.
Anderson, William, Northain, Sussex.
Archibald, Robert, Pembroke, South Wales.
Atkinson, John Charles, Stockport, Cheshire.
Baldwin, W. E. W., Ilminster, Somerset.
Barrett, W. P., Laxton Villa, Cheltenham.
Bowhill, T., Darlington, co. Durham.
Britton, Thos. A., Kingsfield Terrace, Faversham, Kent.
Bush, W. H., Barnsbury Road, Islington.
Carroll, Michael J., Limerick.
Ching, Henry, Kingston Road, South Wimbledon.
Clarke, T. N., 23, North Parade, Penzance.
Cochrane, C. E., 53, Caversham Road, Kentish Town.
Clough, James, Whitehaven, Cumberland.
Cox, W. G. R. A., Scotwood Road, Newcastle-on-Tyne.
Dale, Thomas H., Manchester.
Dickie, James G., Nethercraigs, Paisley.
Drake, A. J. D., Gresham, Norwich, Norfolk.

Marked thus * passed with Second Class Honours.

Dyson, Clement, Hurworth, near Darlington.
Evans, W. R., Cork.
Farrance, Franklin, Eastbourne, Sussex.
Fergusson, H. C., Perth.
Forbes, A. C., Kington, Herefordshire.
Fotherby, J. Peacock, Beckingham, Norfolk.
Franklin, W., Abbey Road, St. John's Wood.
Fryth, William, 622, Coventry Road, Birmingham.
Galloway, William, Dumbarton, Dumbartonshire.
Gardiner, B. C. R., Gunton House, Blackheath.
Galwood, M. W., Old Sampford, Essex.
Gold, J. A., Ladywood Road, Birmingham.
Gooderson, F. R. P., Wincanton, Somerset.
Grant, John, Bonnyton, Rayne, Aberdeenshire.
Hallam, Ernest H., 17, Hartington Street, Barrow-in-Furness.
Harris, J., White Cross Street, Monmouth.
Hart, A. K., Girvan, Ayrshire.
Hartington, Michael J., Limerick.
Hawes, A., 38, Oxford Mansions, Oxford Street, W.
Hirst, Samuel, Broad Street, Bath.
Hodge, W. D., Plymouth, Devonshire.
Hordern, Jos. Lowe, Southport, Cheshire.
Hounsell, Thomas P., Chertsey, Surrey.
Howell, Herbert, Aberdeen Terrace, Clifton.
Hurford, R. J. G., Bungay House, High Barnet.
Jackson, Alex., Glasgow, Lanarkshire.
Johnstone, R. E., Cumberland.
Jones, W. H., Plymouth, Devonshire.
Jones, W. H., Chatham, Kent.
Jones, Richard, Llannwchylln, Merionethshire.
Keely, John, Harold's Cross, Dublin.
Kinnear, J., 735, New City Road, Glasgow.
McAleen, Jos., Tyrone, Ireland.
McConnell, Alex., South Alloa, Clackmannanshire.
Macdonald, W., York Grove, Peckham.
Marquis, Duncan, Hyndland, St. Patrick, Glasgow.
Marshall, F. T., Kidbrooke Park Road, Blackheath.
Martin, B. V., Knightstown, Navan, Ireland.
Millman, C. H., Dartmouth, Devon.
Mullan, E. P., Dublin.
Murray, Edwin, Driffield, Yorks.
Neale, C. R., Firland, Arbroath, Forfarshire.
Norbury, W. C., Catherine Street, Macclesfield.
Packman, W. C., Hednesfield, Staffordshire.
Paton, Alex., Montrose, Forfarshire.
Parsons, C. N., West Dulwich.
Penhale, John H., Bideford, Devon.
Pickworth, H. W., 18, Albert Road, Tamworth.
Powell, P. W., Stroud, Gloucestershire.
Pickwell, G. H., 1, Eaton Row, Eaton Square, W.
Prentice, E., 64, High Street, Whitechapel, E.
Radcliffe, Geo., Oldham.
Reid, Andrew, Dunscore, Dumfriesshire.
Richardson, James, Stony Stratford, Bucks.
Roberts, A. E., Tintern, Chepstow, Monmouthshire.
Roberts, W. Irwin, Newbridge, Near Ruabon, Denbighshire

Robertson, John, Madderty, Crieff, Perthshire.
Sherriott, A. J., Lynwood, Herne Bay.
Skoulding, J. B. W., Walpole Street, Sloane Square.
Sloane, R. Wilson, Moniave, Dumfriesshire.
Smith, W. J., Sunderland.
Somers, Hy. L., 25, Suffolk Street, Pall Mall.
Sorley, Robert, Hazlehead, Aberdeenshire.
Spurgin, Harry, Ongar, Essex.
Stewart, R. O. F., Montrose, Forfarshire.
Thomson, David, Petty Street, Inverness.
Thursfield, Thomas, G. N. R. Co., King's Cross.
Walker, Adams, Huddersfield, Yorks.
Ware, C. S., Leominster, Herefordshire.
Webster, William, Preston, Lancashire.
Whitney, F. W., Mareham-le-fen, Lincolnshire.
Wilkinson, Amos, Ashton-under-Lyme, Lancashire.
Wilks, P. A., Gwynne House, Hereford.
Williamson, Thomas J., Horner Terrace, Fairfield Road, Blackheath.
Windsor, H. Joseph, 2, Fleming Street, Govan, Glasgow.
Wishart, C. D., Haddington.
Wright, W. F., King's Lynn, Norfolk.
Wormald, F., Eastbourne, Sussex.
Yardley, G. M., Laintwardine, Herefordshire.
Young, J. C., Kirkintollich, Dumbartonshire.
Young, Peter, Clyde Street, Edinburgh.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

A QUARTERLY meeting of the Association was held at the Hop Market Hotel, Worcester, on Tuesday afternoon, the 12th of November. In the unavoidable absence, through indisposition, of the President (Mr. G. Wartnaby, of Burton-on-Trent), the chair was taken by Mr. Carless, of Worcester, one of the vice-presidents. There were also present Professor Pritchard, Messrs. Blakeway, Malcolm, Gibson, Birmingham; Collett, West Bromwich; Smith, Tunstall; Huband, Cheltenham; Burchnall, Loughborough; Green, Alfreton; Pemberton, Bridgnorth; Pritchard, Cartwright, Wolverhampton; A. Carless, Stafford; Barling, Ross; Gooch, Stamford; Dawes, Hon. Secretary, West Bromwich. Visitors: T. D. Walker, Walsall; and F. Foster, Worcester.

Letters and telegrams of apology for inability to be present were read from the following: Professors Penberthy, Macqueen, McFadyean, McCall, Williams, Sir H. J. Simpson, Messrs. Prickett, T. Coe, J. W. Coe, Bambridge, Aris, Grasby, Barrett, J. G. Crowhurst, Merrick, Jones, Wolstenholme, Trigger, J. F. Simpson, Olver, E. G. Crowhurst, A. Green, Spencer, and others.

Nominations and Elections.

The HON. SECRETARY, at the request and on the behalf of the President, made the following nominations for membership: Messrs. Frank H. Gibbings, F.R.C.V.S., Nottingham; Charles Taylor, Nottingham; William Herbert Taylor, Nottingham; and James Whyte, Tenbury, Worcestershire.

The election of gentlemen whose names had been duly nominated at the previous meeting was next proceeded with, and no opposition was offered in either instance. The names were: Mr. A. B. Forsyth, Cannock, proposed by Mr. Collett (in the absence of his nominator, Mr. Prickett), and seconded by the Hon. Sec.; Mr. J. Simpson, Maidenhead, proposed by Mr. Barling and seconded by Mr. Blakeway; and Mr. Evans, Stratford, proposed by the Chairman, and seconded by Mr. Malcolm.

The HON. SECRETARY read a letter, addressed to the President by Professor Macqueen. It was resolved that the subject of the letter be placed on the agenda for the next meeting.

The motion on the purchase of tooth shears was ordered to stand over to the next meeting, through the absence of the proposer.

On Fistula.

In the course of his remarks, Professor PRITCHARD said the difficulty which he experienced in coming to a meeting of this description was that of selecting a subject likely to obtain general approval. Veterinary medical associations had been in vogue for many years, and papers of all kinds had been introduced over and over again. He even thought he himself must plead guilty to having introduced this very subject on some previous occasion, but fistula, to his mind, was not an inappropriate topic for an occasion like the present. For one reason, it appeared in many parts of the horse, and the opinions that were held concerning the treatment of it varied very considerably. Therefore, it was a subject which most of them knew something about, and consequently it was a subject with regard to the treatment of which a good many of them held different opinions. Under those circumstances it certainly must be a subject calculated to give rise to a profitable discussion, for he always held that a meeting of veterinary medical associations which listened to a paper or an address, and then eschewed discussion, was next door to a failure. To attempt to exhaust the subject was out of the question, and therefore he should first of all confine himself to speaking on fistula generally, to speak of the structures in which it was to be found, to deal with the causes that gave rise to it, and then to make some general remarks with reference to special cases which they met with in some parts of the horse's body. Fistula was the condition of a portion of a structure of the body, associated with the formation of tubes, commonly called sinuses. Many of those present might have thought he should have used the word "wound," but they sometimes had fistula where there was no external evidence of a wound, although subsequently a wound might make its appearance—but the fistula might, nevertheless, as completely exist without the appearance of a wound on the surface, as if there were a wound. For example, a horse might receive a bruise to his coronet—where fistula most frequently formed—and before the wound could break out the fistula would be in existence. Before going further just let him say a word with regard to those tubes. Some scientists had endeavoured to draw a distinction between a sinus and a fistula, but to his (Professor Pritchard's) mind, it was a case of splitting straws. In the one it was said that the tube communicated with a number, while in the other the tube was a blind *cul de sac.* He had said that fistula made its appearance in certain structures, and the general opinion—expressed, probably, without thought—was that it was necessary that the structure should be of a lowly organised character for fistula to exist in it. Now, he was quite willing to admit—indeed, he should lay it down as a fact—that where they more frequently found fistula, the structures were lowly organised; but, at the same time, he must also strongly lay it down that there was scarcely a structure in the body that might not become involved in fistula. He himself had experienced a case of fistula of the ear of a horse, which was a highly organised structure. They sometimes found it in the anus, though it was not so frequently the case with the horse as it was with the dog, or still more so, the human subject. Still fistula was more frequently found in structures which were lowly organised, such as the coronet, the poll, the withers, and so on. Now, what were the causes? Injury through external violence should be placed first in the category. A quittor was perhaps as

frequently formed as the result of injury to the coronet as any other cause that could be named. Fistula of the withers principally resulted from injury either through rolling and crushing the withers, or, as was perhaps most frequently the case, through a crush from the saddle. But there were other causes which gave rise to fistula, besides injury. It might result from bad surgery. An operation improperly performed, interfering with structures which such operation ought not to affect would give rise to the formation of fistula. Injury at another part some little distance from where fistula subsequently made its appearance, would give rise to it. There were still further causes which gave rise to fistula, but he would leave them for those present to suggest in the course of the discussion if they thought well.

Let them next consider some of the special forms of fistula, and he would first take the form which most frequently happened, namely, quittors. A quittor might be produced through injury. He had heard it said that frost bites would cause quittors, but of that he, personally, had very grave doubts. Horses that were "pricked" or "bound" in shoeing, or horses suffering from separated corns would suffer from quittors. Let them probe a quittor, and they would find there were tubes frequently running in more than one direction.

All manners of treatment had been adopted—some advocated the use of the actual cautery, or the introduction of strong caustic agents ; bi-chloride of mercury, for example, had been used to destroy the sinus. Others—himself amongst them—had recourse to the use of the bistoury and the injection afterwards of a strong solution or a strong caustic—he preferred saturated solution of chloride of zinc. But whether they carried out one line of treatment or another, they must either partly or wholly destroy the wall of that sinus, whether by plugging with caustic, by the introduction of the actual cautery, or by the use of the bistoury. They could not possibly succeed unless they destroyed, either partly or wholly, the wall of the sinus. The only other point in connection with the line of treatment which we should adopt is the nearest way to go to work. He had tried them all, and he had also told them what he had succeeded with better than anything else, but there was a way to make this incision when using the bistoury—a wrong way and a right way. He never hesitated to make a bold incision in the coronary band. They were told they would perhaps have a "false quarter"—an expression which ought to be effaced from the dictionary—which meant that the growth of the horn afterwards represented something irregular. On putting the probe in the sinus they might find it extend right down to the lateral cartilage ; instead of putting the bistoury in and slitting in a downward direction, and so dividing the coronary band transversely, the incision should be made obliquely, that would not only facilitate the healing of the wound, but the coronary band would become as complete as ever it was, and no interference with its function would take place.

The next most frequent form of fistula they met with was in the withers, and he need not make any remarks as to what gave rise to it, beyond what he had already said. It was largely due to injury, and the treatment which he should adopt was very similar to the line of treatment which he should adopt in a case of quittor.

With regard to poll-evil, they did not see so many cases now as they used to, and that was attributed to the fact that stables were now built so much better than they used to be. It was more difficult to cure than quittor or fistula of the withers. One reason for that, unquestionably, was the greater number of layers of fascia in connection with the muscles there ; and another reason was the great amount of movement which took place there. Quietness of the part affected was necessary to effect a speedy cure, and it was beyond a horse's capability to keep his head quiet for long together. They had, there-

fore, not only to deal with an extra quantity of lowly organised material, but also to counteract the fact of a greater amount of movement than in any other part of the body where fistula occurred. The treatment was exactly the same as in the other two cases. Use the knife boldly, for to make a good case of poll-evil, a man must be a good surgeon. They need not be afraid of any dangerous hæmorrhage.

He now passed to another kind of fistula, which was not generally accepted as being fistula at all. He referred to scirrhous cord. He had opportunities of examining that condition of the animal both during life and after death, and he had never yet seen a case of scirrhous cord without finding in its centre a sinus, and one as well developed as was to be found in any other part of the body. In operating upon those cases, where he had been unable to remove the whole of the substance, he had found that if he removed a portion of it as high as he could follow the thickening up, the same results accrued as if he removed the whole.

Having alluded in greater detail to his experience of a case of sinus at the root of the ear, which he said was a most difficult case to deal with, Professor Pritchard concluded his remarks by a reference to a case of fistula in the salivary duct. That was principally the result of injury, such as a kick from another horse, and they got a flow of saliva from the face. If they could deal with those cases directly after the accident had happened, it would be a tolerably easy matter, but when the parts had become partly healed and the edges of the wound indurated it was often extremely difficult to bring about a permanent closing of the orifice. In cases of that description he advised scarifying the edges of the wound, the application of a blister around the margin of it, and the painting on frequently a solution of bi-chloride of mercury of the strength of one to eight. It would be the last thing he should do to destroy the duct.

Before sitting down, he expressed the hope that he had said sufficient to excite some little interest in the minds of those present, and that a profitable discussion would take place.

Discussion.

Mr. W. CARLESS (Stafford), in opening the discussion, said they had all learned something important that day, and he hoped the members would be able to turn it to profitable account. Fistula was a thing which they all had to contend with, and in large towns they got more fistula of the feet than he did where he lived. Those cases were not so nice to treat, nor so successful as they could always wish. He thought the boldest method, as Professor Pritchard had described, was ihe shortest, the safest, and the most effectual. The knife and the hot iron were always the two instruments he preferred to have with him when he saw a case of fistula. He thought these were often inclined to interfere with the thing too much, a thorough doing in the first instance was sufficient, and then give Nature a chance. Add to that as much quietness as possible, and he thought they had before them the best method of procedure. He disapproved of the idea of exploring with the finger, they were apt in that way to make some sinuses and leave the one they were in search of altogether alone. The quieter the parts could be kept after the operation the sooner would they get well. If they had a good opening, and it was irrigated with some mild antiseptic lotion, their case would, in his opinion, succeed much better.

Mr. MALCOLM joined in thanking Professor Pritchard for his instructive address. Few questions could be dealt with of more practical moment than fistula. Personally, although he worked in a large town, he could not claim to have many cases of quittor, for he rarely, if ever, saw them. He had, however, at one time had a lot to do with poll-evil and fistulous withers. He referred to the time when he was engaged in colliery practice, and he thought

the low seams had a good deal to do with it. He also found that the boldest surgery was the best. In connection with scirrhous cord, he was both interested and instructed by the Professor, when the latter said that if they removed a certain section of it, they would have practically the same results as if they removed the whole of it. As that was a fact in the Professor's own experience, it must be of interest to all of them. If they had much scirrhous cord to deal with, and had much difficulty in removing the whole of it, it was certainly as well for them to know that by removing a certain portion of it they would secure as good results as if they removed the whole of it. To learn that fact alone, in his opinion, would well repay anyone for attending that meeting.

Mr. HUBAND said it was like old times listening to Professor Pritchard. In regard to scirrhous cord, it was quite a new idea to him that the result of operating in part would be followed by equally satisfactory results as if the operation was complete. He joined in the expression of thanks to Professor Pritchard for giving them the benefit of his long and varied experience.

Mr. GOOCH, who was next invited to take part in the discussion, said he had no criticism to offer upon Professor Pritchard's address, which had been a source of much interest to him.

Mr. BARLING was very much struck by what the Professor had said with respect to scirrhous cord. He himself had always endeavoured to get beyond the seat of the disease, otherwise he never thought he should be successful. He agreed with the Professor about the use of the knife, but he himself was most in favour of the actual cautery. There was no wound so healthy as that made by the cautery.

Mr. BLAKEWAY said he had been very much interested in listening to the address, but it occurred to him that it made them inclined to think the treatment of fistula was a very simple matter after all. As a matter of fact, however, there were few more tiresome cases to deal with. He thought few practitioners were anxious to treat poll-evil if they could avoid it, but if they did treat it, it was better to get the case in their own infirmary. He had always found that the best form of treatment was the free use of the knife. If they could feel the end of the sinus with their finger they would do well to put in a small plug of bichloride of mercury. Irrigation with cold water was what he also recommended. He was glad to hear Professor Pritchard allude to fistula of the ear. It constituted unsoundness, and unless a man was careful, it was possible for him to pass a horse as sound with a small fistula at the root of the ear. He was surprised to hear what the Professor said about the treatment of scirrhous cord. In operating upon it, he had certainly himself been of the opinion that he must get at the bottom—or rather the top—of the thing. If it could be successfully treated by removing a portion of it, they had the whole matter in a nut-shell.

Mr. GREEN said the form of fistula with which he was most cognisant was quittor, particularly in colliery horses. He was not blessed with the best of shoeing smiths, and pricks and other injuries did almost irreparable mischief. He could thoroughly bear out what Professor Pritchard had said about the use of the knife in the coronary band. He had operated upon a score or more pit horses during the last ten years, and he had been particularly bold in his treatment because they were not animals of great value. Where he had used the knife freely he had always had better results than when, in the cases of valuable horses, he had acted with greater caution. With regard to scirrhous cord, he had always been under the impression that the more substance he removed, the more successful he was likely to be, and that was the aim he always had in view. But he must say that at times, when he had been dissatisfied with his operation, and when he felt sure he had not removed everything, he had noticed the animal recover.

Mr. SMITH, who briefly took part in the discussion, said he had had several cases of scirrhous cord. He had sometimes not taken the whole of the matter away, but the cases had turned out all right.

The HON. SEC. said he wished to tender his sincere thanks to Professor Pritchard for the very instructive and able address he had favoured them with. He should like to know whether Professor Pritchard had had any experience in the internal treatment of weak iodide of potassium in cases of fistula. The method he usually adopted in cases of quittor was to syringe the sinus out with hot water and then inject a solution of bichloride of mercury, afterwards packing the sinus tightly with cotton wool and applying a blister to the coronet in three or four days time.

The CHAIRMAN also joined in the thanks to Professor Pritchard. He himself was a great believer in the knife and blister. Time forbade him continuing the discussion further.

Professor PRITCHARD replied. In reference to the surprise which his statement regarding the treatment of scirrhous cord had occasioned, he could not help smiling to himself at the remarks of Mr. Green. The latter said that operations which had not been satisfactory at the time had been attended with good results. That was exactly how he (Professor Pritchard) came to the conclusion that removing a portion was as effectual as removing the whole.

Mr. GOOCH exhibited a case of tooth instruments. A vote of thanks was accorded to him for his kindness in submitting them for inspection—proposed by Mr. Green and seconded by Mr. Malcolm.

A vote of thanks to Professor Pritchard for his address was passed, on the motion of Mr. Carless, Stafford; seconded by Mr. Malcolm.

A vote of thanks to Mr. Carless, Worcester, for taking the chair in the absence of the President, was also passed.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of the above was held at the Grand Hotel, Manchester, on Thursday, December 12th, 1895. Tea, 5 p.m. Business 6.30. Present: The President (W. Dacre, Esq.), in the chair; Messrs. Faulkner, Taylor, Carter, Edwards, Hughes, Munro, Stent, Lawson, Howe, Chorlton, Hopkin, Moore, Gubbins, Ackroyd, &c.

Upon the proposition of Mr. EDWARDS, seconded by Mr. MUNRO, the minutes of the last meeting were taken as read.

Election of Officers for 1896.

It was proposed by Mr. W. A. TAYLOR, and seconded by Mr. E. FAULKNER, and carried unanimously, that Mr. J. H. Carter, of Burnley, be President of the Association for the ensuing year.

It was proposed by Mr. W. A. Taylor, seconded by Mr. E. FAULKNER, and carried unanimously, that Mr. Howe, of Buxton, be a Vice-President for the ensuing year.

Proposed by Mr. E. FAULKNER, seconded by Mr. HOPKIN, and carried unanimously, that Mr. Hughes, of Oswestry, be a Vice-President for the ensuing year.

Proposed by Mr. E. FAULKNER, seconded by Mr. HOPKIN, and carried unanimously, that Mr. H. D. Chorlton be Secretary for the ensuing year.

Proposed by Mr. E. FAULKNER, seconded by Mr. Chorlton, and carried unanimously that Mr. J. B. Wolstenholme be Treasurer for 1896.

Mr. E. FAULKNER read a letter of the 23rd November, 1895, addressed to him by Professor Macqueen *re* Professional Combination.

It was proposed by Mr. HUGHES, seconded by Mr. HOWE, supported by

Mr. J. H. CARTER and carried unanimously that a committee of five members of the Association be appointed to consider Professor Macqueen's letter.

Messrs. E. Faulkner, J. H. Carter, W. A. Taylor, T. Hopkin, and H. D. Chorlton were appointed as the committee.

Mr. W. A. TAYLOR suggested in connection with the subject, which he thought affected every member of the Association, that the Committee should be empowered to have copies of Professor Macqueen's communication printed and circulated amongst the members of the Association between this and the next quarterly meeting or the annual meeting if they had to take action, so that every member might be in a position to consider the subject and be prepared to vote according to his ideas.

The PRESIDENT said he considered Mr. Taylor's proposition or suggestion was a fair one and he seconded it.

On being put to the meeting the proposition was carried unanimously.

Mr. A. MUNRO then read a communication on "Husk or Hoose in Cattle," describing fully his mode of operating on animals of varying ages, giving his treatment in several outbreaks of the disease in Cheshire and emphasising the fact of his having so much better results from the inter-tracheal injection of medicinal agents than when drugs given by the mouth had to be relied on or even when fumigation was had recourse to.

The PRESIDENT said Mr. Munro's paper was essentially a practical one, and to him was extremely interesting. He thought it ought to be followed by a good discussion.

Mr. HUGHES, of Oswestry, thanked Mr. Munro for his practical paper, especially for country practitioners, and he had no hesitation whatever in supporting his treatment as it was undoubtedly the most effectual.

Mr. CHORLTON thanked Mr. Munro for his paper, and said he could speak from having seen him operate on calves, that the inter-tracheal injection appeared to be fairly easy and efficacious.

Mr. CARTER regretted he could not offer anything to enlighten the members on the subject. It was a disease that he had had only one case of since he had been in Burnley (12 years). The treatment in Louth seemed to be similar to Mr. Munro's. He gave them (cattle) plenty of salt, and when recovering, allowed a liberal diet.

Mr. GUBBINS said he had only seen one outbreak.

Mr. EDWARDS upheld the turpentine remedy. He had not much faith in the inter-tracheal method, in fact, he had given it up altogether.

Mr. HOPKIN then gave a paper on Examination of Horses as to Soundness, treating the subject from a really practical point of view, and citing some very interesting cases that had come under his notice.

The PRESIDENT thanked Mr. Hopkin for his interesting paper, stating that he had taken them over a little new ground in the very old hackneyed subject. Although hackneyed, scarcely a week passed but something fresh was found in the matter. He thought the paper was worthy of a good discussion.

Mr. ALEC LAWSON expressed his indebtedness to Mr. Hopkin for his interesting paper. There had been a good deal of correspondence in the journals as to grunting. Was grunting unsoundness? It was a most difficult subject. His experience was that if a horse grunts from nervousness, which is a very different grunt, as Mr. Hopkin had told them, from that which arises from sore throat or from a continuous sore throat, which meant the long grunt next door to a roar, he certainly advised his clients to buy the horse, but should tell him what he had heard. As to stringhalt, if a horse had it, his experience was it always had it. He did not, as a rule, think anything of splints. A horse could scarcely be got without them. If you are to condemn splints, 98 horses out of every 100 would have to be condemned. With rest

and treatment, splints almost invariably got better, although some puzzling cases of splint lameness were found. Nothing but time would cure them. He was much obliged to Mr. Hopkin for the pleasant communication.

Mr. TAYLOR thanked Mr. Hopkin for the eloquent manner in which he introduced the subject. It was a patent fact to all observers that the majority of horses working in towns were unsound. The question was whether they were unsound when introduced to the veterinary surgeon. There were many phases in which the subject might be discussed. The principal question of the present time was that of grunting, and he certainly agreed to some extent with Mr. Hopkin, and to some extent with Mr. Lawson, that it depended on the nature of the grunt. If the grunt be slight and short, the animal not too high up on his legs (not above 15.3 or 16), it might perhaps be passed if sound in other respects. But if a deep sonorous grunt with an animal 16 making no noise in his galop, he certainly should not hesitate to reject it. Another matter in the examination of horses for wind and that was the cough; he noticed it was not the custom of some veterinary surgeons to apply pressure to the wind pipe in order to produce a cough. He invariably did this. If he had to certify, "Is the horse that is a grunter sound?" he should certainly say no, and would be justified in his remark. The difficulty was between practical soundness and local or technical soundness. As to stringhalt, he never remembered a case of this to ever disappear. He had seen it more or less evanescent, but he did not know that he ever saw a true case of stringhalt entirely disappear.

The PRESIDENT stated he certainly should not pass a grunter as a sound animal under any conditions whatever. He thonght all the members were indebted to Mr. Hopkin for his paper. He thought wind and hocks were probaby the chief things apart from disease of the heart and lungs. Intermittent whistling—this was a point the lecturer did not touch upon. He thanked him for the practical and lucid manner in which he had given his paper.

Mr. STENT referred to the teeth, and asked would a horse with a decayed tooth be called a sound animal.

The PRESIDENT said his views were somewhat peculiar, so far, in examinations, as that great bugbear, hocks, is concerned. He did not care how lumpy they were so long as they used them well. What had to be taken into consideration was what was the animal going to be used for. He thought a veterinary surgeon should give as bald an account of the soundness of an animal as possible. He believed the veterinary surgeon ought to go straight to the point and, doing his duty by the seller as well as the buyer, make a simple statement that the horse is sound or unsound. That was all that should be required. Indeed, if an opportunity presented itself, never give a certificate at all. With regard to coughs, in the examination as to soundness they were in 99 cases out of 100 indicative of the wind, and were indicative of the condition of the animal in regard to its being amiss, which should be particularly mentioned.

Mr. HOWE thanked Mr. Hopkin for the practical hints and advice he had given on the subject.

Mr. GUBBINS acknowledged his indebtedness to Mr. Hopkin for his excellent paper. If he heard a grunt, or at least anything in the wind, he always said the horse was unsound. Another point which he had great difficulty in deciding was the question of hocks.

Mr. HOPKIN: Splints:—It may be for six or twelve months before they were cured. He thought there was a little confusion in regard to stringhalt and shivering. He did not know that they were ever connected. The two diseases can occur in the same animal. Cough:—He liked to hear the cough. He would rather have a hock with a curb on than a bad hock without

one. Teeth.—If a veterinary surgeon passed a horse with a decayed molar, and it could not masticate, he was afraid he would have a bad case and would be mulcted in damages. He did not agree with the president's recommendation to not give a certificate at all. He thanked the members for the quite undeserved praise they gave him.

Mr. W. A. TAYLOR proposed a vote of thanks to the retiring officers.

Mr. LAWSON seconded.

Carried unanimously.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

A MEETING of this Association was held in the North-Eastern Hotel, Darlington, on Friday, December 6th, 1895, at 4 p.m., P. Snaith, Esq., in the chair. There were also present: Messrs. C. G. Hill, Geo. J. Harvey, and J. H. Taylor, Darlington; G. E. Gibson, Sedgefield; A. Neish and E. H. Pratt, Northallerton; W. Awde, Stockton-on-Tees, and Mr. Purves, a visitor.

A telegram was received from A. Peele, who was unable to attend through indisposition, and a letter from H. Snarry, regretting his inability to be present.

Mr. HILL proposed and Mr. TAYLOR seconded the confirmation of the minutes of the previous meeting. Carried.

A letter having been read from Mr. J. Nettelton, late of Northallerton, but now residing in London, tendering his resignation, it was proposed by Mr. GIBSON, seconded by Mr. HARVEY, and carried that the resignation be accepted with regret.

The SECRETARY reported that he had sent copies of the *Veterinary Record*, containing the account of the differences existing between the Board of Agriculture and the veterinary profession, to twenty members of parliament in the district. From a great number replies had been received of a favourable character, and promising that if the matter was brought before the House of Commons, they would support the veterinary profession to obtain a proper recognition of their services at the hands of the Board of Agriculture. Letters were also read from the Secretary of the Royal College of Veterinary Surgeons, stating that the Council had decided to accede to the wishes of the Scottish and other veterinary associations, and make representations to the Board of Agriculture with reference to the scheduling of tuberculosis in the Contagious Diseases Animals Act for the following purposes:—"(a) notification, (b) isolation of suspected animals, (c) slaughter of all clinically diseased animals; secondly, that means be taken for the veterinary inspection of dairy cows, with a view to guard against the transmission of tuberculosis to man." And from the Lincolnshire Veterinary Medical Association, asking for the opinion of the members as to whether "Grunting in Horses" constituted unsoundness. Several members contended that it was impossible to commit themselves to a general opinion, but that each case coming before them ought to be decided on its merits at the time of examination. Two or three gave it as their opinion that if a horse grunted, he was sure to develop "roaring" at a later period of his life if clear at that time.

Ultimately, on the proposition of Mr. SNAITH, seconded by Mr. HILL, it was decided that the letter be laid on the table for discussion at the next meeting. Carried.

A Committee, consisting of Messrs. P. Snaith, A. Peele, the Darlington Veterinary Surgeons, and the Secretary, were appointed after a certain matter had been discussed, to gain information, and to report from time to time to the Association the result of their deliberations.

Mr. C. G. HILL, M.R.C.V.S., Darlington, then read a paper on Castration by the Standing Operation, as follows:—

Mr. President and Gentlemen,—

At the request of our worthy Secretary, and I must say at rather short notice, I consented to read this paper before you to-day. I certainly did so with a great amount of hesitation, but, thinking as a member of this Association it was my duty to do so, I hope you will pardon any shortcomings and the briefness of details; and if in any way I have contributed to the welfare of our meetings by this attempt, I shall feel that I have only done what every member of such associations ought to do. For some months past the veterinary records have been teeming with correspondence on what has been called the castration craze, under the heading of Anæsthetics v. The Standing Operation. A few have written favouring the latter, but a great many have condemned it.

The opponents of the Standing Operation have gone so far as to say that it is disgustingly cruel and painful, that it is an acrobatic performance. and that it is dangerous to both patient and operator. But one correspondent does not stop here; he states that it is a great cause of scirrhous cord. Scirrhous cord being due to a micro-organism, viz., the micro cœcus ascoformans, poor standing operator is credited with manufacturing organisms. Of all the adverse reasons this is the most absurd, as it is just as likely to occur, if not more so, in the cast subject. These gentlemen are in favour of the animal being cast and put under the influence of an anæsthetic, and the subject castrated by the method the operator is the most skilled in. I am afraid these unbelievers either have never tried the operation in the standing position, may not even have seen it performed, or they may have been unfortunate in their first attempt. The standing operators support their views by the following reasons: that it is the quickest, safest, requires least exertion, and the most humane method up to the present time we can adopt. The instruments used for the standing operations are the ordinary wood clams, serrated scissors, knife or the scraseur, and the Huish-Blake castrator. The only appliance used for defence is the twitch. I believe some use a safety rope; but this is not necessary.

As regards clams I will say very little, as I have only once used them. My objection to their use is that a second visit is compulsory in order to take off the clams, and it is far from being a scientific operation.

The ecraseur I have only used in the cast subject. With it I am afraid in the standing position there would be a tendency to drag on the cord if the animal should move very much. The instrument I use and find the most satisfactory is the Huish-Blake castrator. This instrument, having a great amount of crushing power, brings the hæmorrhage almost to a minimum, and acts immediately. My experience, perhaps, is rather small to that of my fellow-practitioners, for castration in this district is mainly carried on by quacks. This season I have operated on thirty horses, from one year to nine years old, in the standing position, and many calves and bulls with the Huish-Blake castrator.

My method of operating is as follows:—If the box is roomy and light I operate there; if not, I have the animal brought outside and have a twitch put on, one man holding the twitch. I then examine the scrotal region to ascertain that everything is normal. Then, with the Huish-Blake castrator and knife ready, I grasp the right testicle with the left hand from the near side, let out the testicle with a bold and deep incision, break down with my fingers the faschîa between vascular and non-vascular portions of cord. In yearlings I cut the non-vascular with knife. In older animals I crush with the Huish-Blake castrator. My reason for doing so is to do away with any undue hæmorrhage that may occur from the artery of the cord, which in some cases is very well developed. Then leave the testicle hanging vertically by the vascular portion of cord, and do the same with the left testicle. After

this get hold of right testicle, pull it down, put on Huish-Blake castrator, taking care that the cutting edge is not next the scrotum. Close the blades with firm pressure, doing so for a few seconds. As a rule the testicle will drop; if it fails to do so, twist it off. Relax hold of handles gently and the cord will slip up. Remove the other in the same way. The only after-treatment I adopt is to bathe the part with an antiseptic solution. Keep the colt quiet for a few hours, and, if weather is favourable, turn him out, bringing him in at night for a week or two. But of the thirty horses thus operated on I had one case of secondary hæmorrhage forty-eight hours after the operation; it was very slight, and, after plugging scrotum, soon stopped. One colt died three weeks after operation. The report was set about that the animal bled to death. I attended a few hours before death; he was suffering from gastric tympany. I made a *post-mortem* and found ruptured stomach; all the other organs healthy; so I do not attribute this to the operation at all. All the rest did wonderfully well.

What I claim for this method is quickness, safety, humanity, less assistance required, and least pain given. I have castrated a six-years-old stallion under four minutes, so there was not much time for any acrobatic performance on my part. One man as a rule is sufficient, and this to a country practitioner is an important item; for how many times have you had to wait an hour or two for men to be gathered together to assist in the casting?

The horse during the operation shows very little evidence of pain, giving very slight resistance, no sweating, and after the operation will go straight to the manger and begin to eat. Respiration is in no way hurried. You don't get any stiffness nor straddling gait. In these days of keen competition, both fair and very much otherwise, we must look to ourselves and to our profession, and we are compelled to advance with the times.

In some parts of England and Ireland the farmers and owners of horses may be of a more generous and sympathetic turn of mind to what they are here in the North, and prefer their colts to be operated on under the influence of an anæsthetic and remunerate accordingly; but to my mind it is a mistaken idea. If they knew the after effects of chloroform as I know, they would not be so keen to administer it for so short an operation. I have been chloroformed twice, and each time for a week after I was sick, and to this day chloroform has a nauseous effect on me. I would rather suffer a few minutes pain to such ill effects. The only thing that can be said in favour of chloroform in this operation is that it looks a little more scientific and produces on the onlookers wonderment and awe; but in my opinion the after effect does not warrant its use and it increases the risk of the operation, besides the time spent in producing anæsthesia and bringing the subject round again, which sometimes is rather a difficult matter. Then again there is the expense of the drug used. The mere act of casting is a restraint to the horse and he fights against it, and by the time you fix on a chloroform muzzle he is covered with perspiration, and testing the strength of the ropes, and your assistants are panting with the exertion thus caused. If we pressed upon our clients the fact of operating on their colts under chloroform they would laugh at us and we would only increase the work of our unqualified opponents, so it behoves us to choose the method which we think is the most satisfactory to our patients, our clients, and to ourselves.

The standing operation meets all three. I do not mean to infer that all can be castrated in the standing position, but the majority can. Whether the animal be castrated standing or cast the Huish-Blake Castrator is the instrument of the day. It is instantaneous in its action and its great crushing power is sufficient to allay all undue hæmorrhage. Some veterinary surgeons include both vascular and non-vascular organs in the instrument together, but I think this is too great a strain on the Huish-Blake Castrator. I

have not seen any unpleasant symptoms in yearlings after cutting the posterior part of cord with the knife. I use Russel's knife for opening the scrotum. Mr. Huish was kind enough to send me some correspondence he had on the results of last season. Some veterinary surgeons have operated on as many as 250, and out of about 2,000 colts there were onlo only two deaths rsported, so this speaks very highly and these might have occurred if they had been operated on in any other way. We must be less conservative in our ideas, and not throw cold water on new methods until we have given them a fair trial.

Thanking you very kindly for your patient hearing to what I am afraid has not been very interesting, but I hope it will lead to a good and practical discussion.

In the discussion which followed,

Mr. NEISH stated that he had used chloroform for the last three years, but had observed no bad effects from its use. He had operated on colts standing and in the recumbent position, in the former by the ecraseur and in the latter by torsion. He preferred the recumbent position.

Mr. GIBSON stated that he had operated on a great number of colts in the standing position with the ecraseur. He put the colt's head to the rack, and gave the tail a hitch to the stall post. He thinks that there is not so much pain to the animal as by the other methods.

Mr. HARVEY related his experience of castrating by the standing operation for the first time, and said that he preferred to have them cast, but he thought at the present rate of pay for operating on colts in his neighbourhood, they ought to be cast and secured by the owner instead of the operator.

Mr. SWAITH thinks that chloroform is inadmissible unless it is specially requested by the owner of the animal, and he strongly objected to the use of wooden clams.

Mr. AWDE stated that he had seen two cart stallions, six and nine years old respectively, operated upon by the Huish-Blake Castrator by the essayist, and had come to the conclusion that it was by far the best mode of operating on animals which had been handled and least painful. In one case the animal never moved at all, although the only restraint upon him was the twitch, and the operation was completed in four minutes. In the other the horse backed about a yard, but otherwise never moved a muscle, nor showed any indication of distress in any way. Both cases did well, and there was very little swelling indeed.

Mr. HILL having replied, Mr. HARVEY proposed and Mr. GIBSON seconded a hearty vote of thanks to him for his kindness in providing the paper at such short notice, and for the discussion which it had supplied. Carried unanimously.

Mr. TAYLOR brought forward a splendid specimen, and related the history of the case, which was that of a mare which had been under his treatment, having fallen lame after coming off a journey on the near hind fetlock joint, which was enlarged. She had physic administered and a cooling lotion applied to the part for some time, but little or no improvement was manifest; so she was destroyed. The synovia in connection with the joint was blood-tinged, and there was extensive ulceration of the articular cartilage.

Mr. NEISH mentioned a case of suppurative cellulitis, and remarked on the intractability of such cases to treatment adopted, and asked for the views of the members present as to the best medicinal agents to employ.

Opinions differed, but sulphide of calcium was mentioned as a very useful agent to try in such cases.

W. AWDE, *Hon. Sec.*

LIST OF SUBSCRIBERS TO THE VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

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W. Whittle	0	10	6
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W. Shipley	0	10	6
J. Freeman	0	10	6
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R. C. Trigger	0	10	6
J. Reynolds	0	10	6
G. Rugg	0	10	6
F. G. Samson	0	10	6
A. L. Gibson	0	10	6
Henry Thompson	0	10	6
H. House	0	10	6
W. Carless	0	10	6
A. H. Farrow	0	10	6
W. Anderton	0	10	6
A. H. Jacobs	0	10	6
J. M. Axe	0	10	6
H. W. Caton	0	10	6
F. M. Wallis	0	10	6
E. Faulkner	0	10	6
A. J. McCallum	0	10	6
H. J. Goodall	0	10	6
F. Booth	0	10	6
W. H. Webb	0	10	6
J. B. Wolstenholme	0	10	6
A. S. McQueen	0	10	6
H. Hogben	0	10	6
S. Villar	0	10	6
C. Hartley	0	10	6
H. Olver	0	10	6
G. E. Bowman	0	10	6
James Rowe	0	10	6
W. P. Western	0	10	6
W. Bower	0	10	6
F. Danby	0	10	6
O. G. Barrow	0	10	6
C. W. Elam	0	10	6
J. M. Stewart	0	10	6
F. Dun	0	10	6
D. Charnock	0	10	6
J. Blencer	0	10	6
H. Snary	£0	10	6
C. H. Leach	0	10	6
F. Sheather	0	10	6
E. H. Gibbings	0	10	6
B. Russell	0	10	6
J. K. Caulderwood	0	10	6
E. J. Scrivens	0	10	6
W. Maynard & Son	1	0	0
F. Bowman	0	10	6
J. McKenna	1	11	6
A. M. Mason	0	10	6
L. Jones	0	10	6
B. Freer	0	10	6
W. Woods	0	10	6
H. R. Perrins	0	10	6
Samuel Lomas	1	11	6
E. Beddard	0	10	6
J. Storrar	0	10	6
W. Dobie	0	10	6
T. E. Augers	0	10	6
G. A. Banham	0	10	6
R. C. Edwards	0	10	6
Israel Trent	0	10	6
F. R. Stevens	0	10	6
E. Nuttall	0	10	6
J. H. Carter	0	10	6
J. S. Wheatcroft	0	10	6
J. L. Parr and C. Moir	1	1	0
T. Aubrey	0	10	6
J. J. Burchnall	0	10	6
J. Atcherley	1	11	6
P. Deighton	0	10	6
A. Over	0	10	6
Batt and Son	1	1	0
F. T. Stanley	0	10	6
A. L. Butters	0	10	6
Sir F. FitzWrygram	0	10	6
W. A. Field	0	10	6
W. H. Bloye	1	1	0
F. W. Wragg	0	10	6
J. B. Tutt	0	10	6
J. H. Hobson	0	10	6
R. H. Cartwright	0	10	6
T. D. Lambert	0	10	6
J. Woodger	0	10	6
S. Locke	0	10	6
H. D. Chorlton	0	10	6
J. S. Carter and Son	1	1	0
Joseph Hall	1	11	6
S. H. Slocock	1	11	6
T. Collins	0	10	6
J. Wright	0	10	6
A. Bate	0	10	6

G. Morgan	£0	10	6	Hugh C. Jagger	£1	10	6
H. J. Dawes	0	10	6	Trustees of the late Thomas Greaves ..	0	10	6
A. M'Cormack	0	10	6	James Brand	0	10	6
J. W. Edwards	1	11	6	H. G. Bowes	0	10	6
J. and A. Lawson	1	1	0	William Caudwell ..	0	10	6
E. W. Hoare	0	10	6	E. D. Johnson	0	10	6
T. Hopkin	0	10	6	F. H. Ridler	0	10	6
P. Taylor and Son	1	1	0	F. B. Jones	0	10	6
S. Jackson	0	10	6	C. Morgan	0	10	6
T. A. Frost	0	10	6	J. L. Barling	0	10	6
W. H. Ferguson	0	10	6	T. W. Kendall	0	10	6
A. Munro	1	11	6	J. E. Kitchen	0	10	6
H. Gray	1	11	6	Ball and Son	1	1	0
P. Perkins	0	10	6				
H. G. Bowes	1	1	0		£85	9	6
James Brand	1	1	0				

January 11*th*, 1896.

ALFRED H. POWNALL,
JNO. B. WOLSTENHOLME, } *Auditors.*

CONTAGIOUS DISEASES ANIMALS ACT, 1894.

SUMMARY OF RETURNS, for the three weeks ending January 18th, 1896.

ENGLAND AND WALES.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders and Farcy.	Rabies.	Foot-and-Mouth Disease.
None	Outbreaks 349 Slaughtered, diseased, or exposed to infection 5010	Outbreaks reported 30 Animals attacked 68	Outbreaks reported 43 Animals attacked 68	Cases Reported— Dogs ... 38 Other animals ... 2 Destroyed, as having been exposed to infection 25	None

SCOTLAND.

None	Outbreaks 8 Slaughtered, diseased, or exposed to infection 390	Outbreaks reported 10 Animals attacked 19	Outbreaks reported 2 Animals attacked 7	None	None.

IRELAND.

None	Outbreaks 46 Slaughtered, diseased, or exposed to infection 300	None	None	Dogs ... 31 Other animals ... 5 Destroyed, as having been exposed to infection 54	None

THE OUTBREAK OF GLANDERS AT BIRCH COPPICE COLLIERY, HALL END, POLESWORTH.

It will be remembered that on the 2nd December last, four horses were found to be affected with glanders by Mr. Olver, F.R.C.V.S., of Tamworth. This fact was reported to the Warwickshire local authority, and Mr. Ison, of Atherstone, the veterinary inspector of the district, having confirmed the outbreak, the animals were then slaughtered by order of the authority. Subsequently, Mr. Olver tested with "mallein" sixty-one animals at the colliery, the result of which proved that nineteen animals which had been in contact with those already slaughtered were also affected. The nineteen were accordingly slaughtered by order of the authority, several others remaining under suspicion. On December 26th Mr. Olver inoculated with "mallein" the whole of the remaining horses above and below ground, numbering 79, which proved 10 to be affected, and these were slaughtered on the 30th, together with sixteen others which had been exhibiting suspicious signs of having the disease. The last test of "mallein" showed the horses in the seven-foot colliery to be quite clear, and only those that were first under suspicion to be actually diseased. It is hoped that the stringent measures adopted will thoroughly eradicate the malady. Thirty-three animals in all were slaughtered as being affected with glanders, for which one-fourth value, as compensation, has to be paid by the Warwickshire local authority, amounting to £141. For the remaining sixteen, which were ordered to be slaughtered under suspicion, compensation has to be paid to the amount of £262, being the full value. The outbreak has been a very serious matter for the proprietors of the colliery, inasmuch as the works have had to be stopped for some portion of the time, and the men have consequently not been fully employed.—*Tamworth Herald*, Jan. 4th.

SIR T. GIBSON-CARMICHAEL, M.P., ON TUBERCULOSIS.

A meeting of the Galashiels Farmers' Club was held in Maxwell's Hotel, Galashiels, for the purpose of hearing a paper by Sir Thomas D. Gibson-Carmichael, M.P., on "Tuberculosis and the Tuberculin Treatment." Mr. John Scott, of Gala, presided, and there was a good attendance of members.

Sir Thomas Gibson-Carmichael, in giving the results of his own experience of tuberculosis among his herd, said he was a thorough believer in the reliableness of Koch's tuberculin test; for, although it might not act as a cure for the disease, there was not the slightest doubt that it was a test of the existence of tuberculosis in any subject to which it was applied. A year ago he had determined to apply the test to his herd, and his overseer (Mr. Wilson) tested all the animals which he had purchased and all the cattle of his own or his father's breeding above a year old. Describing his method of carrying out the experiments, he said he first took the normal temperature of the animal, and then injected tuberculin. Six hours afterwards he took its temperature, and he continued to take it every three hours until the expiry of eighteen hours, by which time they would know whether the animal was tuberculous or not. He showed by means of charts relating to animals which had been experimented with that the temperature never rose to any appreciable extent above the normal when the cattle were healthy, and when they were tuberculous there was a sudden and rapid rise of temperature. As an example of what a non-tuberculous animal should be, he gave the results of an experiment with an Ayrshire cow, which under the test gave the highest temperature of 103·4 and the lowest at 102·7. Another cow, which was to be killed the following day, began at 101 and rose to 107, and he was certain that the animal when

slaughtered would be found to be highly tuberculous. Having given similar illustrations with regard to Ayrshire and cross cows, to prove the accuracy of the tuberculin test on animals in his own herd to which it had been applied, and which, on being slaughtered invariably showed the existence of tuberculosis, Sir Thomas said there was a feeling in the Lanark district that the disease was only to be found among black cattle, but his experience was that there was far more tuberculosis among Ayrshires and non-pedigree cattle than among Aberdeen-Angus cattle. The result of all his tests with black polls showed that rather less than $6\frac{1}{4}$ per cent. were tubercular, while more than 50 per cent. of the Ayrshires were affected; but in this connection he had to say that the whole of his original herd at Castle Craig was clear. Of Ayrshire and short-horn crosses only one was tested, and it was tubercular; one Kerry cow was tested, and it was tubercular; and a cross Kerry, which was tested, was found to be free. Proceeding to give the results of experiments with Aberdeen-Angus cattle, Sir Thomas said that last March his overseer wrote him that of fourteen cows, eleven were bad and three doubtful. The eleven affected cows were those of which he had formed the highest hopes, as they were the most promising, had been the most costly, and from which he had expected the best results in the showyard. He had been struck with the fact that not a single one of the affected animals had been bred at Castle Craig, all his own animals having come through the test satisfactorily, which made him think that his own "doddies" were not so inferior as he had thought. He had also observed that the animals brought from a particular place, and possessing certain strains of blood, were rather worse than the others. Another matter worthy of notice was that the animals which were worst were those which were smallest round the heart, and he therefore thought they should produce cattle as deep as possible round the heart. Most of the affected cows had been suckling calves, and, in considering what he should do with those calves, he looked at his figures and found that, after all, the calves need not necessarily be tuberculous because their mothers were. The temperature of one cow rose, under the test, from 100 to 106·9, which, he thought, was a very bad case. One of her offspring was a two-year-old bull, which showed as level a temperature as could be desired, and no sign of tuberculosis. The daughter of the cow, however, was tubercular, and she in turn had a daughter, which was thus descended from two tubercular cows, and yet showed a healthy result. He had also found that the animals which were most closely confined were the worst, and those that were most in the open air were the best. He had decided that those dams showing a temperature of over 105 should be killed, and those under that temperatnre should have their calves taken away from them and be entirely isolated. Some of the animals had been sold while he was abroad, but no complaints had been made about them, so that they could not have been very bad, But there were two which were especially bad, one of them being a cow for which he had paid more than for any cow he had ever bought, and her temperature jumped up from 103 to 107 in five hours. The important thing for him was to see that his bulls for breeding purposes were clear, and he had satisfied himself that they gave an equable temperature. In future, all his animals would be sold with a warranty, for he was not going to sell any beast without letting the buyer know that it was free from tuberculosis; and he would further refuse to sell any animal whose dam had shown any sign of reaction without the purchaser knowing it. A fortnight ago he had tested the whole of his own and his brother's herds, together with the cattle kept by his ploughmen and shepherds, and he found that only two which were clear in March last were now affected. He had retested all the bull and heifer calves, with the result that they showed good lines of temperature. He

had ascertained this important fact, that he had nine calves, the offspring of cows which on 7th of March were tubercular, and which were perfectly healthy as far as he could judge from the tuberculin test. He had also tested two two-year-old heifers, one of them the daughter of a very bad cow, and they were quite clear of the disease. He had altogether fifteen animals in his herd sprung from tubercular dams, and which were at present free from tuberculosis. He regarded that as a most hopeful result of the experiments which he had carried out. His experience, therefore, tended to show that by suckling tubercular cows it did not necessarily follow that the offspring would become tuberculous. Another point brought out was that it was a quick rise in temperature which showed virulence in the disease, and that when the rise was not so rapid, the affected animal was not past usefulness. If they were to legislate on this matter in a hurry, they might do something to reduce farmers' profits, but if there was going to be legislation, it was not likely to come because farmers wished their animals protected, but because those in the towns found that their families were in danger of tuberculosis. He thought cattle-breeders should do their best to see that their herds were in a healthy condition. For himself, he had only two animals with which the most drastic legislation could interfere, and he should like that everybody else was in the same position. If the Government did step in to test cattle he hoped they would insist on the animals being branded, for he believed that at present cows were sold to supply dairies which were parted with because they were tubercular. He thought it a pity that the entire carcase of an animal affected with tuberculosis should be condemned, because he believed the meat of tubercular animals might very well be eaten if the worst portions were destroyed; but as regarded the milk of tubercular cows, he did not think it should be consumed.

On the motion of the CHAIRMAN a hearty vote of thanks was awarded to Sir Thomas Gibson Carmichael for his interesting and instructive address, and his health was cordially pledged.

THE CÆSARIAN OPERATION IN THE COW.

BY A. BABB, A.B., M.D.C., SPRINGFIELD, MO.

THE operation of gastro-hysterotomy is fraught with so much gravity that it is justly employed only as a *dernier ressort*, and, consequently, the cases in a general practice, where it is clearly indicated, are comparatively rare. The general lack of aseptic surroundings in the barns and stables of our domestic animals, complicate the after treatment, and their small pecuniary values decrease the number of visits of the surgeon. Both these factors still further reduce the chances of recovery to a minimum.

About six o'clock on the sixth of last April, a gentleman hastened into my office, and told me that a fine, red cow, belonging to Mr. T., at the corner of Twelfth and Laurel Streets, had been in labour since morning.

My aid having been requested, it took but a few minutes to place the usual obstetrical outfit in the buggy and repair to the scene of action. A glance told me that my bovine sufferer was well nigh exhausted, and a moment more, that her throes were very forcible and very frequent. Her owner informed me that this was her seventh calf, that she had had vigorous expulsive efforts since morning, and that he was at a loss to see why the trouble should occur. After hastily doffing my suit and donning apparel appropriate to such cases, an examination was made at once. Barring a partial prolapse of the vagina, everything normal till the os uteri was reached: it was so indurated as to exclude the introduction of as much as the smallest finger—in fact, complete atresia seemed to be present.

The owner was apprised of the situation, informed that the calf could be

saved by the Cæsarian operation, but a decidedly unfavourable prognosis given for the cow. He was urged that if he did not have her treated in this way to dispatch her at once in order to end her misery. He decided to have me try to save both cow and calf. Considering that I had everything to gain and nothing to lose, and being affected with an itching for the knife in such a novel case—a veritable tomomania—I readily consented. As he prized the cow highly, we soon agreed on a fee.

I informed him that at such serious undertakings it was customary to have another member of my profession present to assist, but he objected on account of the extra expense, and stating that he would do anything requested of him to aid me. I told him to wash his hands very clean in warm, carbolized water while I did likewise, and proceeded to prepare the necessary sutures, needles, scalpels, artery forceps, etc.

The patient was secured much quicker than the method can be related, for she was lying on her left side in a small shed or stall, too weak to rise or to make any formidable resistance. In short, all the appliance used was but a common bull-leader introduced into her nostrils, and held by one of his neighbours in such a way as to throw her nose into a perpendicular direction with the weight of her head resting on her horns.

Two ounces of the tincture of opium, more as a stimulant than as an anodyne, was exhibited. The hair was clipped over the appropriate parts and the space washed with a solution of that comparatively unpopular, but extremely useful antiseptic—carbolic acid.

The laparotomy was performed in this manner: commencing about four inches before the anterior angle of the ilium, a free incision was made about fourteen inches downward, angling a little forward; the first stroke of the knife "laid off the land," as a farmer-boy accustomed to ploughing would doubtless express it, for it severed the dermal covering and part of the subcutaneous tissues; the next two came down to the peritoneum, but here a pause was made to apply artery forceps to a couple of small vessels and to sponge off the parts. The hæmorrhage was not extensive and soon subsided; the peritoneum was then divided, and the gravid uterus brought from beneath the intestinal mass, which was held back in the abdominal cavity by my untrained assistant. A twelve inch incision into it enabled me readily to extricate a nice, large, red heifer calf, which showed its appreciation of liberty by repeated kicks and efforts to stand up.

The secundines were then removed, but not before the placenta was severed from each maternal cotyledon by careful manipulations. The wound in the uterus was diligently cleansed and stitched up with fine surgeon's silk —my spools of carbolised catgut being at the hospital and time was too urgent to wait till they could be brought. The womb was then replaced beneath the other viscera, a few blood clots removed from the abdominal cavity and the latter sponged out. Inserting strong sutures into the edges of the great, gaping, outside wound and dressing it completed the operation; most of the work having been done by the light of one dim, flickering. lantern.

Many times have I wondered why our cousins, the M.D's, do not have even a greater per cent. of their patients in major surgery recover, for most of the cutting is done in a strictly aseptic room, on a subject carefully prepared by diet, and rendered immobile by complete anæsthesia and one which would readily heal by first intention. The minute after-attention by trained nurses is also in strong contrast to the gross neglect to which our dumb friends are often subjected.

The next thing in order, to resume my former topic—the cow in question—was the introduction of two sutures through the labia vulval. This having been done, and another dose of laudanum having been administered, I left her for the night.

At my call the next morning she was up, was much brighter in appearance, and had drank about sixteen quarts of gruel made of warm water, shipstuff and oil-meal. Her temperature was 100 degrees, and pulse 90 per minute. The further treatment consisted in the use of stimulants, tonics, and anti-phlogistic agents with solutions of carbolic acid three per cent., or of mercury perchloride, one part to 1,000, as a detergent to the local injury. At no time did the fever exceed three and a half degrees, though for a few days partial anorexia and adipsia were manifest. The peritoneal edge of the wound healed without suppuration and the rest of it by granulation.

She gave enough milk all the time to nourish the calf, and finally furnished an abundance of it for other uses. I saw both on the 17th inst.

The calf is fat and saucy. The cow is still giving a good flow of milk and one has to hunt carefully in her flank to discover any trace of her former trouble.

Of course the owner is abundantly satisfied. The work brought me a little money and perhaps a greater value in reputation—*reputation*, which the physician, as well as the immortal Shakespeare well knows, is "oft got without merit and lost without deserving."—*American Veterinary Review.*

TREATMENT OF TETANUS WITH OXYGENATED WATER—RECOVERY.

By Mr. G. Causse.

This form of treatment, already recommended by Mr. Aureggio, who had already obtained favourable results in two cases of that affection, was put in practice upon an animal, a mare, eight years old, of nervous disposition, which was suffering from an attack of traumatic lockjaw resulting from a punctured wound of the right hind foot received some two weeks previous. The treatment, the first day, was begun with twelve subcutaneous injections of oxygenated water with a syringe of five grammes, six injections on each side of the neck, and combined with mustard frictions on the throat and the masseter muscles, and forty grammes of chloral in rectal injections; heavy blanketings: nitrated watery mashes. The subcutaneous injections on the second day were increased to fourteen and kept up for ten days with little modification, and on towards the tenth day the number of injections seemed to be followed by a marked improvement,

On the following morning a severe relapse manifests itself, which is supposed to be due to the reduction of the oxygenated water. One hundred and fifty grammes are then injected by fifteen injections in the morning and the same quantity given again in the evening, with the addition to the general treatment of 24 grammes of tartar emetic.

THE MICROBE OF DISTEMPER OF DOGS.

BY DR. BRUNO GALLI-VALERIO.

After a careful, but brief consideration of what has been written on this interesting subject, and a claim to priority on the discovery of the microbe in the central nervous system, the author comes to the conclusion that, first, in the young animals affected, one always finds in the lungs and the central nervous system an ovoid bacillus, whose dimensions vary between 1.25 and 2.5μ in length upon 0.31μ in width; second, this microbe gives characteristic cultures upon gelatine at 18° to 20°, and upon gelosis at 38° to 40°; first, the inoculation of these cultures in veins, under the skin, and in the lungs of old dogs, has not given rise to the symptoms of the disease in young animals; fourth, the inoculation of a culture with brain substance under the skin of a five or six-months-old dog, has produced the disease of the young and—important fact—with the characteristic pulmonary and cerebro-spinal symptoms.—*Jour. of Zootech.*

PATHOLOGY OF VACCINIA AND VARIOLA.

BY S. MONKTON COPEMAN, M.A., M.D.CANTAB, M.R.C.P.,
Lecturer on Hygiene and Public Health, Westminster Hospital Medical School.

In my former paper, I stated that the problem has been attacked from two separate points of view:—1. Experimental work having for its object the production—if that be possible—in the bovine animal, by inoculating it with small-pox lymph, of a disease indistinguishable both in its immediate local and in its subsequent general effects, from true vaccinia. 2. Microscopic pathology and bacteriology, including, I may add, the testing of bacteria derived from lymph, also on the bovine animal.

With reference to the first point, I was able to show that of the various observers who at different times have worked at this branch of the subject (among whom, of those now living, King, Simpson, Hime, Voigt, Fischer, Haccius, and Eternod, may be mentioned), all, with the exception of Chauveau, and his colleagues of the Lyons Commission, claim to have obtained positive results, in a certain number of their experiments, at any rate, as regard the production of typical vaccinia, after one or more removes, as the result of variolation of the cow or calf. In many cases, it is true, a long number of experiments have been abortive, especially among the older observers, who made use, for the most part, of heifers or milch cows. Subsequent experience has shown, however, that success is much more likely to be obtained if, instead of heifers or cows, calves be used. On this account, perhaps, Chauveau's want of success may be, in part, explained.

With reference to recent experiments on variolation of the calf, it is worthy of note also that different observers have obtained local effects in that animal, which in different calves of a series have varied considerably. The final result has, however, after a greater or less number of removes from calf to calf been invariably the same, the production, namely, of a local vesicle indistinguishable by any means at our command, such as the appearance and course thereof, or the protective power of the lymph derived therefrom, from true vaccinia.

As far as I am aware, the most recent experiments of this nature which have been carried out are those of Dr. Klein and myself, the results of which have been published in full in the reports of the medical officer to the Local Government Board and in the *Journal of Pathology and Bacteriology* respectively. I do not, therefore, propose on the present occasion to refer to those experiments in detail, but I may perhaps add that, in my own experience at any rate, no question of possible contamination with vaccinia can possibly arise, seeing that all my work was conducted at the Brown Institution, that as a special precaution new scalpels were used, which were invariably first sterilised in a flame; that before and after use the table was thoroughly washed with carbolic acid and water, and during the intervals of use kept exposed to the open air.

As the result of all the work which has been done in this direction, there can, I think, at the present time, be no reasonable doubt as to the possibility of inoculating the calf with variolous matter with the result of producing thereby after one or more removes of a malady which is certainly no longer small-pox as ordinarily understood, seeing that it has now completely lost, when transferred to the human being, its original property of infectiousness. Although this is so, it is nevertheless capable of affording protection, just as vaccinia does, against subsequent vaccination or variolation. In this connection I may perhaps refer to certain experiments of mine on the monkey, which showed that not only is this animal susceptible to inoculation of vaccinia, which runs a course similar to that which is observed in the human being and the calf, but it is equally susceptible to the inoculation of variola.

Furthermore, in the case of the monkey, small-pox lymph and vaccine, either human or bovine, appear to possess mutually protective power one against either of the others.

Turning next to the micropathology and bacteriology of variolous and more especially of vaccine lymph, I was able to bring forward certain evidence bearing on the important subject of the storage and preservation of vaccine lymph, as also on the relationship of variola and vaccinia, so far as microscopic and bacterioscopic examination of lymph can help us. These two subjects I desire particularly to consider on the present occasion.

It is a matter of common knowledge that vaccine lymph, whether stored in the liquid state or freshly obtained from a normal vesicle, usually is found when examined bacterioscopically to contain micro-organisms of various kinds, which have been shown by Crookshank, myself, and by other observers to be for the most part mere saphrophytes. To these, therefore, I have applied the term "extraneous." The practically universal occurrence of these saphrophytic organisms in vaccine lymph, along with chance of superaddition during or after vaccination, of pathogenic organisms by agency of careless people, whether vaccinators or persons having charge of infants, have been advanced as reasons for doing away with the practice of vaccination on the grounds of the possible harmfulness of the extraneous organisms liable to be introduced into the system at the time or in the course of vaccination. This argument, however, so far as the microbes usually intimately associated with lymph are concerned, loses whatever weight originally attached to it, since I have been enabled to show that by thoroughly incorporating a certain amount of chemically pure glycerine with the lymph, and afterwards storing the mixture for a time prior to use, all the ordinary saprophytes found associated with lymph are completely destroyed, as is shown by the fact that no growth arises in any of the ordinary culture media inoculated with such glycerinated lymph. This statement applies equally to the streptococcus of erysipelas, which has on occasion got admission to vaccine lymph. With reference to possible transmissions of syphilis and tuberculosis by the calf lymph, I need say nothing, seeing that it is universally admitted that the first of these two diseases is not transmissible to the calf, and that the bacillus of tuberculosis has never been discovered in vaccine lymph, bovine or human.

In glycerinated lymph we have therefore a preparation which, while even more active as vaccine than the original lymph, can, to the best of my belief, be produced absolutely free from the "extraneous" organisms which at one time or another have been isolated from fresh or stored lymph, with the possible solitary exception of *bacillus subtilis*, which, however, possesses no pathogenic properties. This statement, if it rested on my own authority alone, might, no doubt, be received with hesitation; but, seeing that since I first published in the "Transactions of the Congress of Hygiene" in 1891 the experiments on which it is based, ample corroboration has been afforded by the fact that other observers, including Chambon, Ménard, and Straus in France, Leoni in Italy, and Klein in England, have arrived at similar results. In consequence, no doubt, of the apparent impossibility which existed until recently of isolating any bacterium from vaccine lymph which could be regarded as specific to vaccinia, several observers have sought to prove that organisms of a somewhat higher order than bacteria might be concerned in the production of this malady and also of variola. In this connection it may be mentioned that bodies believed to be of the nature of psorosperms or sporozoa have been described as existing in the vaccine vesicle by Guarnieri and Pfeiffer on the Continent, and by Ruffer and Jackson Clarke in this country; but as to this I was taken to task last year by Ruffer for mentioning the organisms described by Guarnieri and himself in the

same category with those, the occurrence of which had been put on record by Pfeiffer and Jackson Clarke. As, however, the last named gentleman is to bring forward a paper giving the result of his researches, I do not propose to deal further with this subject on the present occasion except to put on record the joint opinion of Dr. Klein and myself to the effect that whatever may be the exact nature of these so-called sporozoa, they have not yet been proved to have any casual relationship with the diseases in question.

On the other hand, as I stated last year, Dr. Klein and I have concurrently, though quite independently, shown that in specially-stained specimens of vaccine lymph, taken at a period antecedent to full maturity of the vesicles, minute bacilli can be demonstrated, often in considerable numbers, and in practicaly pure culture. These bacilli cannot be found, or only with difficulty, in mature lymph, for the reason probably that they have by then given place to spores.

For some time it appeared impossible to obtain further evidence as to the *rôle* of these bacilli, as they altogether refused to grow on any of the ordinary culture media, and under either aërobic or anaërobic conditions, though this very fact obviously tends to show that they are not of a merely saprophytic nature. During the past year, however, certain experiments which I have devised, appear to prove that it is possible to obtain a growth of these bacilli in a particular culture medium, and even to carry on such growth in secondary cultivation. The experiments which have been instituted in this direction are at present but few in number, and it is quite evident that the exact conditions essential to success have yet to be determined, but, nevertheless, I think that the subject is of sufficient interest to justify me in bringing to your notice the results that so far I have obtained in this sense.

As it seemed to me, the desideratum for the purpose of inducing growth of the supposititious micro-organisms was a medium which had not been artificially sterilised, which *a priori* should afford the necessary pabulum, and which at the same time, whether it was to be considered aërobic or anaërobic, was secure in its circumstances against contamination. Hence the choice appeared to lie between the intraperitoneal fluids of one or another living animal and the hen's egg, which has already been made use of as an alternative culture medium.

As regards intraperitoneal fluid I foresaw difficulty, in that it is apt to contain leucocytes, which might easily vitiate experiment, and accordingly I adopted the hen's egg as a matter of first instance. I had no experience to guide me as to the best method of carrying out the inoculation of the egg, or as to the period of incubation best suited for the object I had in view, and my attempts for a time, therefore, met with small success. My inoculations were carried out by first cleansing the surface of the egg with corrosive sublimate solution and afterwards with alcohol, and then breaking a small hole in the shell by means of a sterilised needle and forceps. Through the opening thus made, I mixed the yolk and albumen of the egg by means of a platinum needle, and then carried out the inoculation by means of a glass capillary pipette, which had recently been drawn out in the blow-pipe flame. For the purpose of such inoculations I employed variolous crusts obtained from the small-pox ships of the Metropolitan Asylums Board. These crusts were rubbed up in a small glass mortar with a minimal quantity of sterilised normal saline solution. Of the resulting creamy emulsion a drop or two was then taken up into the glass pipette and the inoculation carried out. Finally, the small hole in the egg was closed up, either by means of a small pledget of sterilised cotton-wool soaked in collodion or with melted sealing wax. The eggs inoculated in this manner were then placed on beds of cotton wool and kept in the incubator at a temperature of 37°C. Here they were left for varying periods of time, a

month being the period which was eventually found to be that which was most desirable.

On opening an egg thus treated I found that in its interior was contained a creamy material, which in great part had replaced the ordinary egg contents. This material examined in coverglass specimens appeared to contain a pure culture of one organism only, namely, a bacillus which morphologically was not to be distinguished from the bacillus which I have previously described as to be found in early vaccine lymph.

My next step was to attempt to grow it in subculture and to make observations also of the effect of its direct transference by cutaneous inoculation into the calf. As regards attempts at subculture in all the media most usually employed for such a purpose, including gelatine, sugar gelatine, agar, glycerine agar, sugar agar, and serum, these failed as subculture of the bacilli contained in vaccine lymph had always failed when the ordinary culture media are adopted, but with the calf it was different.

Calf Experiments.

Experiment I.—On March 26th, 1895, Calf A was inoculated by eighteen incisions (fifteen on the abdomen and three on the scrotum) with a small quantity of the creamy emulsion contained in egg No. 5, which had been incubated for one month after inoculation with small-pox crusts, as already described. On March 30th scrapings were taken from the vesicular points which had appeared in the line of two of the abdominal incisions, and also from one of the incisions on the scrotum which had become slightly raised and red. With material thus obtained calf B. was on the same day inoculated by six linear incisions on a specially shaved area on the abdomen. Three incisions were inoculated with scrapings taken from the vesicular points, and three with scrapings from the incision on the scrotum of calf A. Three days later (on April 2nd) all six insertions appeared to be taking, though eventually one died away. On April 4th the calf was photographed, and on the same day a child was vaccinated from it by Dr. Cory. This child I have since seen. It has five good marks, and the mother told me that the vaccination "did splendidly," and that she had had no trouble with the child.

Experiment II.—On March 30th, 1895, calf C was inoculated on the right thigh in twenty-four insertions with emulsion from egg No. 5, which had been kept in a pipette since the first calf of the series was done. By April 2nd three small vesicular points had appeared in the line in as many of the incisions. With scrapings of these I vaccinated myself, and Dr. Cory vaccinated a child, aged three months. The process in my own case had aborted by the fourth day, but the child "took" quite normally, and had, when inspected on the eighth day, five good vesicles with very little areola.

On April 2nd, also, calf D was inoculated from the small vesicles on calf C in ten incisions on a special area of the abdomen. These all showed, on the fifth day, vesicles not to be distinguished from those of like age arising from the use of current lymph on the same animal.

Experiment III.—On May 7th, 1895, calf E was inoculated on a special shaved portion of the abdomen, in 12 incisions from contents of egg No. 5, taken from a pipette on the previous day. On May 14th six small vesicles, which had appeared in as many of the lines of incision, were clamped and scraped, and the material thus obtained was employed on the same date for the inoculation of calf F in twelve insertions. On May 18th six of these insertions had taken well. On May 21st eleven out of these twelve insertions showed a wide crust surrounded by a vesicular ring. The width of the crust was apparently due to the calf having been able to lick the places, as its collar had been removed by mistake on May 18th. Two of the more

markedly vesicular of these "places" were clamped and scraped, and with the material thus obtained calf G was inoculated by twenty insertions on a special area of the abdomen.

By May 28th all the twenty insertions made had "taken," and no appreciable difference could be distinguished between the vesicles which had arisen on the site of these incisions, and on those which at the same date had been inoculated with current lymph. This calf was twice photographed by Mr. Kent.

From calf G calf H was inoculated on May 25th ; and, further, this strain of variola vaccine, derived in the first instance from the egg culture, was carried on through two additional removes in the calf, after which it was not further cultivated.

On May 28th, 1895, lymph taken from vesicles at the third remove from the egg culture, were in my absence employed by Dr. Cory for the vaccination of a large number of children at the Animal Vaccine Establishment, owing to the fact that for some reason or other the current strain of lymph had failed to give good results in the two calves which had been vaccinated according to the usual routine. All these children showed excellent marks when inspected a week later, and several of them were photographed by Mr. Kent.—*The British Medical Journal.*

FOWL DIPHTHERIA AND PUBLIC HEALTH.

BY J. LAWRENCE-HAMILTON, M.R.C.S.

AMONG the many magnificent up-to-date industrial monographs published by the Bureau of Animal Industry—one of the most useful branches of the U.S. Department of Agriculture—the exhaustive 1895 treatise on the Infectious Diseases of Poultry is specially worthy of attentive study by poultry breeders and hygienists.

This book is artistically illustrated with numerous original plain and coloured bacteriological and pathological plates, admirably arranged by Drs. Theobold Smith and Veranus Moore, who have had the great advantage of working under the expert direction of Dr. D. E. Salmon, the chief of the Bureau of Animal Industry.

It may be well to recall the summing up of the relationship of fowl diphtheria to public health, as expressed by Drs. Theobold Smith and Veranus Moore in the following extract :—

"A comparison of the bacillus of diphtheria in man (Klebs-Lœffler) with the one described by Lœffler as the cause of diphtheria in fowls, shows that morphologically and in their pathogenesis for experimental animals, the two organisms are in no way alike. There is also a marked difference in the nature of the exudates in fowls and in man. The non-identity of these diseases has been clearly pointed out by Ménard (*Revue d'Hygiene.* tome XII. (1890), p. 410). Although these diseases are shown by several observations to be unlike in their etiology and the character of their lesions, the transmission of fowl diphtheria to the human species, and *vice versa*, is affirmed by several writers.

"Gerhardt (*Revue f. Thierheilkunde u. Viehzucht*, Bd. VI. (1883), p. 180) reports four cases of diphtheria among six workmen who had charge of several thousand fowls, many of which died of diphtheria, in Wesselhausen, Baden. There were no other cases of diphtheria in the neighbourhood, and the evidence was quite conclusive that the disease was contracted from the affected fowls. It is also stated that an island on the north-eastern coast of Greece had been free from diphtheria for at least one-third of a century, when a dozen turkeys, several of which were diseased, were introduced. Soon afterwards diphtheria appeared in a house near the garden where the turkeys

were kept. The disease became epidemic on the island, causing the death of 36 people, or over 40 per cent. of those attacked.

"Debrie (reviewed in *Centralblatt f. Bakteriologie*, Bd. XIII. (1893), p. 730) reports briefly the clinical history of six cases of diphtheria which occurred in the garrison of Sebdou, and states that while the sixth case (two were fatal) was still under treatment in the hospital, ten fowls kept in a house not far from the hospital were attacked with diphtheria, and exhibited symptoms strikingly like those present in the human beings. Five of the ten fowls died, and two heads were sent to Arloing, who confirmed the diagnosis of fowl diphtheria. The fowls were fed by a hospital attendant, and it was ascertained that an identical outbreak had occurred among the fowls at a neighbouring place, from which one of the six cases of human diphtheria had been brought. Debrie is inclined to the view that human diphtheria is transmissible to fowls, and fowl diphtheria to man.

"Cole (*Archives of Pediatrics*, XI. (1894), p. 381) reports an interesting case near Jacksonville, Ill. A flock of fowls became affected with a disease characterized by an exudate on the mucosa of the head. Some of the exudates emitted a foul odour (Cole's description of the disease shows that it was undoubtedly the same as the one I have studied). As the weather was cold, one of the chickens was taken into the house where a child about two and a half years old fondled it. Four days later the child was taken sick, apparently with diphtheria, from which it died. There were no other cases in the neighbourhood, and the affected chicken was the only possible source of infection.

"The diphtheritic disease of fowls, reported by Loir and Ducloux (*loc. cit.*), in Tunis, in 1894, spread to the people of that place, resulting in an epidemic of serious proportions. Ménard refers to the fact that men employed to feed young squabs, contracted diphtheria by blowing the masticated food into the mouth and crop of squabs (or young unfledged pigeons) suffering with that disease. Schrevens (*Bulletin de l' Acad. Royale de Méd. de Belgique*, VIII. (1894), p. 380) reports several cases of diphtheria in children, in which he traces the source of infection to certain poultry.

"Although the number of reported cases of the transmission of fowl diphtheria to the human species, and *vice versa*, is small in comparison with the extent of the disease in poultry, the evidence that such a transmission is possible is quite sufficient to discourage the careless handling of diseased fowls. It is a quite common practice, especially in the rural districts, to bring the sick chickens into the house for treatment, where the children of the household are allowed to fondle them at will. It is not improbable that when this disease is thoroughly investigated, the number of cases of direct infection from this source will be found to be much larger than it is at present supposed. Until such investigations are satisfactorily completed, the indiscriminate handling of diphtheritic chickens, especially by children, and the exposure of fowls to the infection of diphtheria in the human species, whereby they may become carriers of the virus, should be strenuously avoided."

ARECOLINE AS A SUBSTITUTE FOR PILOCARPINE AND ESERINE.

FRÖHNER formulates the following conclusions :—

(1) Arecoline is an active sialagogue in doses of .01 to .05 gram ($\frac{1}{6}$ to $\frac{3}{4}$ grains); (2) Like eserine, arecoline is a laxative; its action is equivalent to that of eserine and pilocarpine combined. It is ten times more active than pilocarpine and equally as active as eserine. Doses of $\frac{1}{6}$ to $\frac{3}{4}$ of a grain act in from fifteen to thirty minutes. (3) The laxative action of arecoline is accompanied by colicky pains; (4) Some subjects show nausea; (5) Large doses

produce sweating; (6) Often there is abundant discharge of urine; (7) The discharge of urine is due to the contraction of the walls of the bladder; (8) The heart-beats are accelerated; sometimes they are arhythmical; cardiac paralysis, diminution of the blood pressure and of the temperature; (9) Small doses do not influence the respirations; large doses produce dyspnœa and kill by asphyxia; (10) Toxic doses cause muscular spasms; .25 grams (4 grains) produce epileptiform convulsions; .50 grams (8 grains) kill with tetanic symptoms, like strychnia and nicotine; (11) The therapeutic dose in the horse, given hypodermically, is .01 .05 gram. It is best to commence with .05 gram, and if no action results, the dose can be repeated at the end of an hour; (12) In the ox the maximum dose is .1 gram ($1\frac{1}{2}$ grains); (13) Arecoline possesses no myotic action; only when applied locally does it produce myosis; (14) Of the areca nut powdered, the horse can take 200 grams and the ox 500 grams.

The anthelmintic doses are as follows:—

Horse	100 grams.
Ox	250 grams.

These doses contain from one to twenty-one grams of arecoline.

Arecoline holds an intermediate position between eserine and pilocarpine; it acts uniformly upon the glandular secretions and the muscular contractions; sometimes the secretory action may predominate.

Fröhner recommends this agent in all affections in which it is desired to produce an evacuation of the intestinal contents and its rapid dilution, such as in cases of intestinal obstruction.

Besides, its sialogogue action recommends the drug in exudative diseases, in rheumatoid inflammation of the foot.

Arecoline is contra-indicated in nervous colic, in the pregnant female, in tetanus, and in pharyngitis.

It can also be used in verminous colic.

Another advantage arecoline possesses over eserine is that it can be more easily preserved. Also it is less expensive.—*Jour. de Méd. Vét. et de Zoötech.*

PLANT ASSIMILATION AND RESPIRATION.

Mr. F. F. Blackman, B.Sc., of Cambridge, has completed some very fine experiments with a view to deciding the path by which carbonic acid passes out of the leaf in respiration and into it in carbon-assimilation.

Hitherto the teaching has been that the cuticle of the leaf played a large part in allowing the exit and entrance of gases, this teaching being founded on the experiments of Barthélemy, Boussingault and Garreau. Mr. Blackman points out where these experimenters erred, and why their conclusions are not reliable.

By the aid of a complicated and elaborate apparatus, through a series of most convincing experiments, it is now proved that gaseous interchange is chiefly stomatal. Mr. Blackman's conclusions are:—

1. Under normal conditions, practically the sole pathway for CO_2 into or out of the leaf is by the stomata. Since oxygen diffuses more readily than CO_2, through fine openings, the same probably holds for oxygen and the whole of the gas exchange.

2. Under abnormal conditions, when the stomata or intercellular spaces are blocked, and the surrounding tension of CO_2 is great enough, passage of CO_2, by osmosis, may take place.

3. That such closure of stomata as is held to take place in darkness does not prevent the distribution of gas-exchange closely agreeing with that of the stomata.

4. That the exhalation of CO_2 in bright light by a leafy shoot in Garreau's well-known experiment, is not the expression of any physiological truth, but only due to the imperfections of the conditions. Isolated green leaves, fully illuminated, allow no CO_2 to escape from them.

Army Veterinary Department.

The Queen has been graciously pleased to give orders for the following appointment to the Distinguished Service Order, in recognition of the services of the following officers during the operation of the Chitral Relief Force :—

To be Companion of the Distinguished Service Order—Vet.-Lieut.-Col. R. Poyser, A.V.D.—*The London Gazette.*

Veterinary-Lieutenant-Colonel W. A. Russell, District Veterinary Officer, Woolwich, is placed on retired pay from 6th instant.

Veterinary-Major J. Kettle has been directed to take up the duties of District Veterinary Officer, Woolwich, from 6th instant.

Veterinary-Captain G. H. Fenton and Veterinary-Lieutenant T. E. W. Lewis joined for duty at Woolwich on 20th and 23rd ultimo respectively.

Veterinary-Captain J. A. Braddell embarked for a tour of service in India on 17th ultimo.

Veterinary-Captain E. H. Kelly embarked for a tour of service in South Africa on the 1st instant.

Veterinary-Captain F. Raymond arrived from India on six months' leave of absence on medical certificate.

Owing to the death of Staff Veterinary-Surgeon R. G. J. Hurford, a Good Service Reward becomes vacant.

Legal News.

Poisoning by Muttor Peas.—At Birmingham on 6th and 7th January, Mr. Justice Day and a jury were engaged in hearing a case of poisoning by muttor peas. The action was at the instance of Mr. John Robinson Whitmore of Dudley Arms Hotel, who sought to recover damages for alleged breach of warranty from Mr. John Vincent Wood, maltster of Evehill, Dudley. According to the evidence led, plaintiff was a jobmaster who kept some thirty horses. Defendant was a maltster and also a corn and forage merchant. Defendant had met plaintiff and had urged him to buy a quantity of peas as a most excellent food for horses. Plaintiff had not been in the habit of using peas for his horses, but on the defendant representing to him that these peas were of an excellent and nutritious character, and had been used by defendant's own horses with great success, plaintiff was induced to buy 25 bags of them at 11s. 6d. per bag. He bought these peas entirely on the recommendation and warranty of defendant that they were a most excellent food for horses. The horses received a proportion of these peas in their food for some days, after which time an alarming proportion of them became ill. The veterinary experts called in to see the horses found that the peas were of *Lathyrus sativus* genus, and were undoubtedly the cause of the poisoning of the animals. Dr. Voelcker and several other experts certified to the well-known fact that these peas, when given in considerable quantities, were of a decidedly poisonous nature. After a long proof had been led, counsel for the defendant said his case was, that even a poisonous drug, strychnine for instance, was not only harmless, but even beneficial when properly mixed with other substances, and the same thing might be said with regard to the muttor peas. The jury, on the question of liability, found for the plaintiff, the amount of damages to be assessed by a referee.

Notes and News.

EDINBURGH UNIVERSITY COURT.—The Edinburgh University Court met on Monday, January 6th. Present: Principal Sir William Muir (in the chair), the Right Hon. the Lord Provost, Sheriff Mackay, the Hon. Lord Stormonth-Darling, Mr. Colston, Mr. J. Hope Finlay, Mr. A. Taylor Innes, Dr. Joseph Bell, Professor Sir William Turner, Professor Crum Brown, and Professor Butcher. The minutes of last meeting were submitted and approved. The following additional examiners were appointed for the year from 1st inst.:—D. A. Stevenson, B.Sc., M.Inst.C.E. (Engineering); W. Owen Williams, F.R.C.V.S. (Veterinary Hygiene); Dr. James O. Affleck (Medicine in its Bearings on Public Health); Sir A. C. Mackenzie, Mus. Doc. (Music).

OUTBREAK AMONG CATTLE IN EDINBURGH—EFFECT ON THE MILK SUPPLY.—Within the last fortnight it appears that there have been several cases where orders have been issued by the Judge of Police prohibiting the sale within the city of milk brought from cowkeepers' premises within the county. This action has been found necessary in respect of an outbreak among cattle in the vicinity of the city of a species of cow itch or scabies, which had been communicated also, in many cases, to the byre workers and those attending to the cattle. The orders were issued under the powers contained in section 25 of the Edinburgh Municipal and Police (Amendment) Act, 1891, which provides that—"Whenever it shall be certified by the Medical Officer of Health to the Prosecutor that milk is being brought within the city from any farm, dairy, or place beyond the city in which any person is suffering from infectious disease, or that in his opinion infectious disease is being spread or is likely to be spread by the sale or delivery of milk from any farm, dairy, or other place, within or beyond the city, and that the said milk is being sold or offered for sale in any shop or premises within the city, or distributed therein from carts or otherwise at the risk of communicating such disease to the inhabitants, the Prosecutor shall apply to a Magistrate or the Judge of Police for an order to prohibit the sale of such milk within the city from and after due intimation of such order, until the person affected has been removed, or shall have recovered from such disease, the premises have been disinfected and the bedding and clothing have been destroyed or thoroughly disinfected, and until it is certified by the medical officer of health that the said premises are free from infection and in a proper sanitary condition, and that the sale of milk from such place may be safely resumed, and every person contravening such order shall, for the first offence, be liable to a penalty not exceeding £5, and for a second and every subsequent offence to a penalty not exceeding £10." The most energetic and prompt measures have been taken in every case by Sir Henry Littlejohn and his assistants to have the supply of milk stopped at the cowkeeper's premises and at various milkshops in the city retailing the milk. In all these cases the police court officials have been able to obtain the necessary warrants and serve the requisite notices upon the dairykeepers in the county and dairies in the city within two hours after the reception of the certificate necessary under the Act. It is satisfactory to be able to announce that the outbreak shows signs of subsiding, and there is no cause for alarm.

THE HORSE TRADE.—The number of horses exported from this country during the eight months ended August 31st was 12,310, against 9,355 in the corresponding period last year, the value having been £345,024, against £290,852. There were 313 stallions, 2,519 mares, and 9,478 geldings exported. The number of horses imported was 22,755, against 15,614. In this year's figures there were 583 stallions, 6,583 mares, and 15,589 geldings, the value having been £605,586, against £360,913 last year. The greater part of the increase in numbers was from the United States and Canada.

Extracts from Foreign Journals.

SOME PHYSIOLOGICAL EFFECTS PRODUCED BY INTRAVENOUS INJECTIONS OF MALLEIN.

In a note presented in 1893 to the Biological Society, Messrs. Cadiot and Roger studied the action of tuberculine and mallein on the secretion of sweat, leaving deliberately aside the effects which these toxic agents might have on the heart and the vascular pressure. Of these two latter subjects M. Guinard has made a special study, with particular regard to the dog and the ass; he used raw mallein (*malléine brute*) diluted in its own volume of sterilised water. The results obtained are as follows:—(a) the ass, in particular, and the solipeds in general, have a greater susceptibility for mallein than have any other animals; (b) intravenous injections of mallein produce at first a slackening of the heart-beat with a very distinct increase of heart-energy. This latter effect is very marked in the ass, and resembles closely the action of pneumo-bacilline. In the secondary period of intoxication the heart-beat is hastened and heart-energy diminished; (c) the carotid pressure increases at first, after the first injections of mallein, then presents great variations, and at last falls slowly and gradually to far below its normal level; (d) mallein produces on the nervous system very remarkable exciting effects, succeeded by general depression and torpor; (e) the most characteristic and the most dangerous toxic manifestations produced by mallein do not show themselves at once, but develop slowly, and are not distinctly perceptible till long, sometimes several hours, after the injection. There is, in fact, a latent period of varying duration, which suggests the possibility of the evolution of toxalbumens and new poisons at the expense of the receiving organism, and in this way the provocation of self-poisoning (auto-intoxication) instead of intoxication properly so-called. To sum up, it is a logical deduction from these and other experiments that the increase of temperature, called forth by mallein as a detective of glanders, is due to heat-producing secretions performed by the organism itself under the provocative influence of the toxic agent, and performed all the more actively if the organism has been prepared by previous infection; hence the greater susceptibility of glanderous subjects, which react under treble doses, whilst healthy subjects are little affected.—*Journal de Médécine Vétérinaire et de Zootechnie.*

A GERMAN VETERINARY SCHOOL.

The following details are given in the *Berliner Thierärztliche Wochenschrift* regarding the veterinary college of the German capital. During the academic year 1894-5, there attended for the summer session 433, and for the winter 436 students, being a considerable decrease on the numbers for the five preceding years. The students who underwent the first examination in natural sciences numbered 113, and of these 74, or 65½ per cent., passed at their first attempt, as against 60 per cent. in the preceding year. But 29 of the students rejected as "insufficiently prepared" in one or other of the branches, got through at a second attempt three months later, thus bringing the total up to the respectable figure of 103, or 91 per cent., as against 89·3 per cent. the year before. Of the successful students 23 were commended as "good," and 4 as "very good." Fifteen students who might have gone up for this examination shirked it for one reason or another; but, even adding these to the number who did present themselves for examination, we get a total of 80 per cent. of passes.

For the professional or degree examination, there presented themselves 126 candidates, and of these 115 (91 per cent.) passed.

In the anatomical dissecting-rooms 71 horses, 64 horse-heads, besides a number of smaller domestic animals, were consumed. The sum of £170 was spent in anatomical preparations.

In the medical wards for the larger domestic animals 972 patients were received, of which 11 were killed, 168 died, and 42 were dismissed uncured. Of diseases there were 169 cases of lung complaints (lost 33 = 19 per cent.), 22 of tetanus, 16 of lumbago, and 387 of colic (lost 83 = 21½ per cent.).

Four hundred and fifteen horses and five cows were examined for soundness, and of these 73 horses were declared free from all blemish. Of the faulty animals 101 were found to be suffering from nervous diseases, 61 from roaring, 58 from asthma (together—64 per cent. of the faulty horses), 18 from restiveness, 23 from spavin, and 43 from other chronic lamenesses.

In the surgical wards 980 horses were treated, of which 27 were killed, 16 died and 95 were dismissed uncured; 595 were cured and 247 relieved. Serious operations were performed on 344 patients, of which 257 were cast and 94 were narcotised.

In the public wards 9,107 horses were presented for treatment, of which 1,964 were suffering from internal disorders and the rest from external. There were also presented 6,386 dogs, 174 cats, 128 other mammals, 553 birds (amongst which were 200 parrots), and actually a frog and a serpent!

By the travelling corps 692 visits were made; 104 complete studs or herds were examined and treated, and, in the way of single animals, 102 horses, 678 cattle, 65 pigs, 28 goats and 5 dogs. *Post-mortems* were performed on 4 horses, 58 cattle and 22 pigs. In the Pathological Institute *post-mortems* were performed on 213 horses and 2 cattle.

Reviews.

A Text-Book of Veterinary Obstetrics. By George Fleming, C.B., LL.D., F.R.C.V.S. Second edition. Revised. (Baillière, Tindall & Cox., London.)

In perusing this book, which undoubtedly is the best contribution in the English language to veterinary science, as applied to obstetrics, that we have had during the past few years, the first thing that strikes us is the enormous amount of work, time, and patience that Dr. Fleming must have devoted to bring it to such a pitch of perfection.

We have always looked upon the authors of books as of three kinds: firstly, the original writer of a book, Darwin, for example; secondly, the writer who compiles and adds his own experience; thirdly, the translator. To the first we must give the greatest credit, as what he writes is original, and yet what might be scribbled off as fast as pen could fly. To the second we must also give great credit, as he has to read and study many books, in many languages, before his own work can be of sufficient value. In this category we place the book under notice. To the third, the only credit due is that he happens to know a foreign language sufficiently well to enable him to translate a book from that particular language into his own.

We would point out to our readers that Dr. Fleming's work comprises about 700 closely printed pages, contains some 226 illustrations, and that there are two parts, divided into ten books. The first part treats of Eutokia, which is sub-divided into obstetrical anatomy, obstetrical physiology, the pathology of pregnancy, and normal parturition. The second part, under the heading Dystokia, is divided into books on maternal dystokia, fœtal dystokia, obstetrical operations, accidents after operations, pathology of parturition, and finally the diseases and abnormalities of the young animal. Dr. Fleming does

not confine himself to obstetrics only as regards the cow, but includes the mare, the bitch, the sow, ewe, and goat. Nor does he confine himself to obstetrics, pure and simple, but gives us the anatomy, physiology, and pathology of obstetrics.

It is impossible for us in our limited space to review this valuable work so fully as we should like to do. There is not an English-speaking or English-reading practitioner but will find, on perusal of the work, a very large amount of sound information, and we specially recommend it to practitioners and to students as a valuable work of reference. Dr. Fleming has been an earnest and brilliant contributor to veterinary literature for many years past, and this, his latest production, is perhaps his greatest. In conclusion, we congratulate the publishers and printers on the excellent manner in which they have produced this work.

Möller's Operative Veterinary Surgery. Translated and edited by J. A. W. Dollar, M.R.C.V.S. (D. Douglas. Edinburgh. 1895.)

This will doubtless be a welcome and useful addition to existing works on the surgical treatment of the domesticated animals. The translator seems to have accomplished his task with commendable faithfulness and to have given an interpretation of the original marked by perspecuity and with a suppression of his own personality which will bear imitation. If it is allowable to offer any criticisms that are not altogether favourable to this work—which seems doubtful in view of the cumbrous witticisms with which Mr. Bruce was assailed in the *Veterinary Record* when he ventured to doubt the correctness of the figure illustrative of prolapsus or inversion of the bladder—we would like to make a few remarks on it.

The work is divided into twelve sections, and the surgery of the different regions is described under diseases of head, neck, thorax, abdomen, stomach, and bowels, rectum and anus, urinary organs, female and male organs of generation, spine and pelvis, fore limb, and hind limb.

The section devoted to diseases of the head contains a useful exposition of dental diseases and the curative means to be adopted, though there is nothing particularly new recorded, and the directions as to how to operate are decidedly too vague, while the descriptions of causes and symptoms are rather too long drawn out.

There appears to be some confusion about the affections of the sinuses; the term facial sinus is used at one place for frontal, and a little further on the cavity is called frontal, the chapter itself being headed "Empyema of the Cranial Sinuses"!

A tumour of the false nostril is figured and called an atheroma; such a term is misleading.

There is an illustration of an actinomycotic tumour of the parotid gland which looks far more like a "wen" affecting the submaxillary lymphatic glands, and these are not due to actinomyces, and do not affect salivary glands. In operating for removal of cænurus cerebralis, one is told to use a "few light blows of a hammer to drive in the trocar." If sheep had a voice in the matter one would think that they would prefer to be treated by an expert shepherd.

The section on diseases of the neck contains some very good descriptions of pathological processes and accidents affecting this region. The translator adds a note (page 132) that "Goitre and the condition resulting from it—myxœdema—are now treated with perfect success by the subcutaneous injection of thyroid extract, or feeding with thyroid gland." Myxœdema is surely generally held to result from atrophy or excision of the thyroid and not from goitre.

In the treatment of foreign bodies on the œsophagus of cattle, it is recom-

mended to perform *rumenotomy* and await results. Puncture of the rumen, and allowing the canula to remain in position, is doubtless intended.

The insertion of a gag in the mouth, and the adoption of expectant treatment, is not mentioned, and yet this is in the majority of cases all that is necessary. Again, the casting of the animal for the purpose of endeavouring to extract the foreign body, or in order to pass the probang, is not recommended, but as a matter of experience, either of these operations are much more easily accomplished in the recumbent position, the animal being placed on the left side.

This section contains a description of the operation of laryngotomy, and the statement is made that "the greater number of horses which, owing to roaring, have seriously suffered in the performance of work, can by this operation be restored to usefulness."

Sections 4, 5, and 6 are devoted to diseases of the abdominal walls of the stomach and of the intestines, and contain descriptions of hernia of the various animals, of foreign bodies in the alimentary tract, puncture of the intestine, and of the rumen and rumenotomy, invagination and rotation of the bowel, and prolapse of the rectum and anus.

Directions are given for the untwisting of a rotated colon. If this operation can be performed it must only be in the very earliest stages, most cases of twisted colon are difficult to give a draught or an injection to; it is not easy therefore to understand how the animal is to be kept quiet and in the standing position while the operator turns the bowel over.

In puncture of the intestine of the horse (which the author appears to regard as a dangerous operation) we are told that the instrument should be boiled for five or ten minutes in water or soda solution, the hair shaved off with a razor, the skin washed with soap and rinsed with a disinfectant (such as sublimate solution). If possible the field of operation should be washed with ether or spirit preparatory to washing with the disinfectant.

We consider this to be the dilettantism of antisipsis. Without any precautions beyond ordinary cleanliness, local or general bad results are extremely rare after this operation, and one often has to operate when there is littie time to wash or disinfect the skin, to say nothing of the tonsorial precautions.

The diseases of the urinary organs are treated of in the seventh section and are fully described. On page 337 is the illustration of inverted bladder, which led to Mr. Bruce's criticisms, and the translator's courteous and lucid explanations. We have seen two or three cases of inversio vesicæ but have not observed the two fountains figured in the picture.

There is a full description of amputation of the bladder, an operation which appears to be common in Germany: we trust it may answer. The eighth section treats of surgery of the male organs of generation and contains a good description of the castration of cryptorchids, but not a word about castration of normal horses or of the castration of other animals. This is a serious omission in a work on Operative Veterinary Surgery.

In the diseases of the female genital organs it is stated under prolapsus uteri that the application of the truss or the insertion of sutures into the labiæ are seldom of much use after reposition of the organ. Most English practitioners will hardly agree with this dictum. There is in this section a good description of inflammation of the mammary gland of the cow.

The remaining sections which are concerned with descriptions of the diseases of the spinal column and pelvis and fore and hind limbs, contain some good chapters on paralysis, fractures and lamenesses affecting these regions.

Several lamenesses are put down to nerve affections (due to stretching, &c.), which we have been content to assign to muscular or tendinous sprain.

In the treatment of bog spavin the evacuation of the sac and its injection with tincture of iodine are spoken of as possible remedial measures. We

have only to say that one student at the Christmas examination was rejected in his "practical" for hinting that one might adopt such means as a *dernier ressort* after firing and blistering, &c., had been tried in vain.

We knew that nothing was sacred to a sapper; it appears now that the hock joint is not exempt from surgical interference.

Among the causes of laminitis the practical factor in the etiology of this disease, according to our opinion, gets quite a subordinate place.

In the text (p. 696), severe work, continuous standing, and unskilful shoeing are placed first in the list, whereas it will be found in actual practice that faults in feeding are responsible for 90 per cent. of the cases of laminitis met with.

If there is one disease more than another in which a veterinary surgeon can, by skilful treatment, be of service, it is in laminitis, and it often remains with the practitioner whether a valuable animal shall recover its perfect usefulness or remain a cripple.

The treatment recommended here is bleeding, cold application, pilocarpine, morphia. In "dietetic" laminitis a dose of physic may be given. We have never seen bleeding do any good whether practised at the toe, the coronary, plexus, or at the jugular.

In severe attacks of laminitis there are, in our experience, three indications which must be fulfilled—to get the bowels open with oil, to remove the shoes, and apply hot poultices, and put the animal down if (as is usual in severe cases) it won't lie.

The description of the operation of lithotomy both in the horse and the ox, directs the operator to cut through the corpus cavernosum. There is no doubt that the spongy tissue is meant, but this body though erectile is of course never called corpus cavernosum.

ELEMENTARY VETERINARY MANUAL, FOR THE USE OF OFFICERS ATTENDING VETERINARY CLASSES. By BRUCE SETON, ESQ., Surgeon Captain, Indian Medical Service. (Gale and Palden, Aldershot.)

This booklet of 110 pages has been sent to us for review. The author, according to its index, having touched on some 230 subjects, it is evident that conciseness is its strong point. To amateurs it should be of some service as many of the diseases and injuries to which the horse is subject are commented on, although briefly, in a very practical manner.

Obituary.

Gresty Colin, Newgate Street, Accrington..	April, 1883,	Graduated
Ellis, Samuel Henry, Maldon, Essex ..	April, 1868	„
Carney, Nicholas, Openshaw, Manchester	April, 1863	„

Communications, Books, Journals, etc., Received.

The Veterinary Magazine, Philadelphia; Farm and Home; Agricultural Journal; Country Gentleman's Journal; American Veterinary Review; Johns Hopkins Hospital Reports; Columbia Calendar; Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); L'Echo Vétérinaire (Liége); Annales de Médecine Vétérinaire (Brussels); Oesterreichische Monatsschrift für Thierheilkunde (Vienna: M. Perles); Berliner Thierärztliche Wochenschrift (Berlin: Richard Schoetz); La Revista Veterinaria (Buenos Aires); La Revista Agronomica (La Plata); La Clinica Veterinaria (Milan); Il Nuovo Ercolani (Pisa).

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

MARCH, 1896.

IMMUNITY AND HEREDITY.

BY M. H. HAYES, F.R.C.V.S.

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Immunity.

IMMUNITY is the power which an individual or a species has to resist the attack of a disease. It may be racial, individual, or acquired; and may be absolute or comparative. For instance, horses possess racial immunity against the scarlet fever of man and the pleuro-pneumonia of cattle. Men are immune from strangles; and ruminants, from glanders. Among every species of animal, we find individuals which are more or less refractory to the inroads of a disease to which their fellows show marked susceptibility. The man, horse, or ox which has had one attack, respectively, of small-pox, strangles, or pleuro-pneumonia, will have acquired more or less immunity from a second attack.

The tenacity or hardness of the red corpuscles of the ox seems to be the cause of the comparative immunity of that animal to surra. Lingard, has, however, succeeded in inoculating bullocks with the virus of surra. These animals suffered no ill effects from the experiment; although surra, under all ordinary circumstances, is invariably fatal to horses.

As possessors of comparative immunity, I may cite Algerian sheep, which are refractory to anthrax, when inoculated in the ordinary way; but prove susceptible to it when the dose of the virus is largely increased.

Dogs rarely contract tetanus; horses, on the other hand, are very susceptible to it.

The comparative immunity of the carnivora against actinomycosis is a subject upon which the requirements of space prevents me from dwelling. The immunity of fowl

against anthrax appears to be due to their high internal temperature (about 107.5° F.); for Pasteur has proved that if a fowl be inoculated with anthrax, and is then placed and kept in water at a temperature of 77° F., so as to considerably reduce its internal heat, it will die of anthrax in about a day-and-a-half.

The nature of the lesions set up in the tissues by certain diseases, greatly affects comparative resistance. Thus, in a man who has been inoculated with anthrax, the virus is more or less arrested at the seat of inoculation in the malignant pustule which forms at that spot; but in the horse it spreads, apparently unchecked, throughout his entire body. Hence, anthrax is far more fatal, and runs a much more rapid course, in horses than in men.

In affording an explanation for the action of the system in resisting the attack of disease germs, pathologists, as a rule, take one of two sides, namely, that of those who hold the theory that protection is obtained by the serum of the blood, or that of those who, with Metchnikoff, award the credit to the leucocytes and cells of the part. Perhaps the safer plan would be to regard both theories as partly correct. Nuttal, Buchner, and others have shown that the serum of the blood without the presence of leucocytes, has a well-marked germicidal action, which, according to von Fodor, is in accordance with the immunity of the particular animal. This observer showed that the germicidal power of the serum decreased with the temperature, and that it is strengthened by the addition of a drug which, like carbonate of potash or carbonate of soda, increases the alkalinity of the blood. We know that in inflammation, the leucocytes and the cells of the injured part absorb and digest dead and effete matter. (For further information on this subject, I may refer my readers to the last (1895) edition of Erichsen's Surgery). Metchnikoff has proved that the leucocytes and these cells, both of which he classes under the heading of *phagocytes*, perform a like office in contagious diseases by absorbing into their substance and by digesting the attacking microbes. I may point out that in the lesions of malignant pustule of man, of tubercle, of glanders, and of all other inflammatory processes, there is always collected an immense number of leucocytes, which attempt the removal of microbes or of dead and deleterious substances. The followers of Nuttal, with some show of reason, assert that the *rôle* of the phagocytes begins only after the invading microbes have been destroyed or rendered inert by the blood serum. They, therefore, regard the phagocytes

only as scavengers, and not as protectors of the tissues. Whichever view we take, we shall be equally impressed with the necessity of supporting the vitality of the system, when combatting the attack of an infectious disease.

Acquired immunity is never absolute. Thus, although one attack of smallpox or one of strangles almost always confers immunity from a second attack in, respectively, man or horse, exceptions are now and then met with. This immunity lasts a long time in some diseases; only a short one in others; and may have even a negative influence. In malarial fever, one attack, for instance, increases the susceptibility to a second attack.

In those diseases in which one attack has a well-marked power of conferring subsequent immunity, protection, according to Metchnikoff, is acquired by the previous training in devouring microbes which the leucocytes have undergone. "If we inoculate the virus of anthrax, for example, under the skin of an ordinary rabbit and of a rabbit which has been protected by vaccination, behold what we may observe at the respective seats of inoculation. In the ordinary rabbit the microbes multiply rapidly. The swollen part is full of watery fluid, and is poor in cells. Little by little the swelling extends; the neighbouring ganglions enlarge; and the infection becomes generalised. In the protected rabbit, on the contrary, the bacilli multiply at first, but soon the leucocytes arrive in such great numbers that the microbes are taken and killed; the fluid in the swelling, instead of being clear, becomes thick, cells are abundant in it, the bacilli disappear, the disease does not extend, and it becomes cured. (*Cadéac.*)

I may point out that after an attack of intermittent fever in man, the protozoa which give rise to the disease may be found for a long time, possibly years, in the blood, and do not appear to suffer from the attacks of the leucocytes. It would therefore seem that, in this case, one invasion, by filling the blood with these animalculæ in a living state, would confer susceptibility, not immunity, to a second attack.

Immunity may be acquired by the paralysing influence which the material formed in the tissues by the disease germs has on these microbes. Bouchard has proved this in the cultivation of the bacillus of blue pus; and Raulin in that of the *aspergillus niger*. As a familiar instance, Cadéac cites the experiment of putting yeast in a solution of sugar, which mixture will produce carbonic acid and alcohol. After a

certain time the fermentation will stop. If we add sugar to the liquid the yeast will recommence growing; but the fermentation will soon again stop, and will not begin afresh even if we add more sugar. If, on the contrary, we add water, the fermentation will commence again; and will also do so, if by heating the liquid, we drive off the alcohol which has been formed. In the first case, the effect of the water was not to add to the materials necessary for the nutrition of the ferment, but to dilute the matters formed by the yeast, of which alcohol was the principal. In the second case, the heat expelled the alcohol or considerably diminished it, and the fermentation commenced anew. Here, the alcohol has a poisonous or paralysing effect on the yeast which produced it. This theory may serve to explain the fact that certain diseases, like contagious pleuro-pneumonia and pink-eye, run a definite course, at the end of which, if the animal has survived the severity of the symptoms, the disease will disappear. In this class of diseases, the acquired immunity will naturally be comparatively short-lived. The material which Pasteur employed for inoculation as a preventive to rabies, and which is obtained from the spinal cord of the rabbit, may act in the same manner, by checking the development of the microbe that is supposed to produce rabies. Up to the present, no plausible theory has been put forward to explain the fact that one attack of certain diseases, strangles and anthrax for instance, confers, as a rule, permanent immunity.

Behring and Kitasato have shown that the serum of animals which have had respectively diphtheria or tetanus, and the serum of animals which are naturally immune to these respective diseases, are antidotes to these complaints. Some of the most recent experiments in this branch of science are those of T. D. Fraser, who has made animals immune against poisonous snake-bite by repeated injections of the venom, the dose of which was at first from one-tenth to one-half the ordinary lethal amount, and was gradually increased, without injuriously affecting the patient, to five or six times the quantity capable of killing under normal circumstances. He further found that the serum of the blood of an immunised animal was a powerful antidote to the poison. We have no exact knowledge respecting the manner in which such immunity is conferred.

The attenuated virus of certain diseases, rabies and anthrax for instance, is a preventive vaccine; in other words, the inoculated animals acquire immunity. We know very little indeed respecting the manner in which these agents act. It

seems probable that this immunity is obtained only in those diseases the symptoms of which are due to the poison formed by the bacteria peculiar to the disease in question. We may have here, as suggested by Metchnikoff, cases of training of the leucocytes.

Heredity.

Heredity is the appearance, in descendants, of like of parents or of ancestors. This production of like is limited to parental or ancestral function, and, consequently, cannot begin after birth. For instance, if a foal got mange from its dam or sire, such mange could not be called hereditary. Heredity in disease is manifested by parental or ancestral tendency or by direct transmission from a parent.

Hereditary tendency.—The ovum of the female on being fecundated by a spermatazoon of the male, becomes a living being gifted with the mental and physical properties of both its parents, probably in varying proportions, and consequently contains those of its paternal and maternal ancestors in proportions which decrease according to the remoteness of the descent. These hereditary properties, even when decreased to an almost infinitely small fraction by the successive division of generations, are capable of becoming stimulated into development by surroundings or by forces unknown to us. Thus, after a period of possibly 100,000 generations, a single-toed mare gives birth to a foal which has one or more feet resembling those of its three-toed ancestor, the *hipparion gracile*, or other nearly allied fossil horse. Under ordinary circumstances, the nearer the ancestor the stronger is the influence of heredity; although in no case, speaking within reasonable limits, can such influence be entirely effaced. The more nearly related dam and sire are, the larger is the proportion in the offspring of properties which they both derive from a common parent or ancestor. Hence, consanguinity is a fruitful cause of excessively-developed heredity defects. I may point out that the union of a brother and sister would, other things being equal, be twice as close a case of incest as one between a parent and its offspring.

Acquired characteristics, mental as well as physical, may become hereditary, as, for instance, "faintheartedness" from "punishment" in racing, roaring, and navicular disease.

Direct transmission.—This agency is usually centred in the dam, whose blood may carry the microbes of infectious diseases, like anthrax, glanders, tubercle, and strangles, or the eggs of worms to the fœtus.

THE INFLUENCE OF A PREVIOUS SIRE.—AN APPEAL.

BY O. CHARNOCK BRADLEY, NEW VETERINARY COLLEGE, EDINBURGH.

THE theory that a sire may influence future progeny not begotten by him may be said to be classical, and is held by most, if not all, veterinarians and breeders.

It is a matter of common experience to hear a breeder—and perhaps more commonly a dog fancier—say that a certain female has been spoiled for breeding purposes by having intercourse with a badly-bred or mongrel male. The annual pecuniary loss from this source may be estimated as considerable.

The history of this theory dates back some eighty years, and the instance most commonly quoted in illustration of it, is that of Lord Morton's chestnut mare, which, in 1815, was covered by a quagga, subsequently giving birth to a hybrid which showed distinct external evidence of its alien ancestor in the black bars which were present on its legs and shoulders, and in the shape of its head, which resembled very closely that of a quagga. In 1817, 1818, and 1821 this chestnut mare was served by a black Arabian horse, with the result that three foals were born, all of them showing the influence of the quagga "in the possession of body stripes and bars on the legs."

In 1849 James M'Gillivray, a veterinary surgeon of Huntly, wrote a paper on the influence of a previous sire, which created a considerable amount of interest, and in which he propounded a theory to explain the phenomenon. M'Gillivray's theory, however, was one which did not meet with the full and unreserved acceptance of scientists, as it appeared that he was labouring under the delusion that the fœtal and maternal bloods mixed with each other; this, however, was probably not the idea he wished to convey.

Professor Harvey, of Aberdeen, happening to see M'Gillivray's communication, took up the subject and brought it prominently before the scientific public in a series of extremely able and interesting essays which he contributed to the Edinburgh *Monthly Journal of Medical Science* and other medical periodicals; he subsequently collected these essays and published them in book form under the title of "On the Fœtus in Utero," with an explanatory sub-title, "As inoculating the maternal with the peculiarities of the paternal organism." To this book I would refer such of my readers as are anxious to obtain a fuller account of this theory.

Of late years little seems to have been done in the shape of collecting evidence to clear up any doubts that may exist as to the tenability of the theory.

In the *Journal of Anatomy and Physiology* for January of this year, Dr. Bell, of Dunfermline, has, however, made an attack, and this attack has led to the writing of the present article and the making of an appeal to those members of the veterinary profession who hold any opinion upon the subject supported by actual experience.

Dr. Bell, after reviewing the present position of the theory, says:—"I cannot believe that one sire can influence subsequent progeny unless the most absolute proof be forthcoming, or instances are quoted of the most reliable nature, where the evidence is so indisputable that it cannot be gainsaid."

Surely no one is more able, or placed in better circumstances, to bring forward such proof, and such instances, than the veterinary surgeon, who will bring a scientifically-balanced mind to bear upon such cases, or reported cases, as may come under his notice in the daily routine of practice. My purpose in writing this, therefore, is to ask, nay to entreat, my professional brethren to give me their views upon this matter; stating in precise terms whether they do or do not believe that subsequent progeny may be influenced by a previous sire, and, wherever practicable, quoting cases which have come under their personal notice (not cases of hearsay) and which have led them to support or refute the theory. I know that response to this appeal will mean the expenditure of both valuable time and much patience, but I think that if sufficient evidence be forthcoming to settle the question either one way or the other, the end will amply justify the means. For myself, I promise, should sufficient response be made, to receive the evidence and give it forth again to the profession in its collected form, and I feel confident that by this means a very valuable contribution might be made to our knowledge of the laws governing breeding.

NOTES ON TWO CASES.

BY E. PLANT, M.R.C.V.S., HOLMES CHAPEL, CHESHIRE.

ON November the 26th, 1895, I was called, about 1 a.m., to see an aged gelding, which the messenger told me was choked. Thinking, no doubt, the message was correct, I took with me the probang, balling iron, hypodermic syringe, also ol. lini. and chloroform. As the distance was only one

mile, I walked. Upon my arrival I found the message to be correct. The obstruction (either a piece of carrot or turnip, as the horse had been having both cut into pieces, but probably the former from the shape, which was round, about 2½ inches in diameter, and ½ inch thick), was situated at the lower third of the cervical portion of the œsophagus. The symptoms I need hardly describe, from the fact that the obstruction could be seen as well as felt, except that there was repeated gulping and frequent attempts at vomition, which were almost painful to witness. The treatment consisted of administering ol. lini. and chloroform, but little, if any, passed the obstruction, being returned by the nostrils. I then hand-rubbed the neck over the obstruction for a considerable time, alternately administering a mouthful of the oil and chloroform, but without the desired effect. I next injected atropine into the œsophagus over the obstruction, and waited a few minutes for the result, which I thought would be dilatation of the muscular fibres of the œsophagus, and then by again applying the hand-rubbing with pressure, the obstruction might pass on to its proper destination. However, this proved of no avail also. I then decided to pass the probang; and this operation is what caused me to relate this case, from the fact that I performed it standing. My method of procedure was as follows:—Only having two youths and one man to assist me, and having no casting tackle with me, to say nothing of the very small hours of the morning, I had the horse turned round in the box, with his head to the door. I then put a twitch on the off ear, put the balling iron in his mouth, and had the other ear held also, this being done to keep the head in as straight a line as possible. I then proceeded to pass the probang, having previously warmed and oiled it. I had not much difficulty in passing it as far as the obstruction, but now came the difficulty. Having to use a considerable amount of pressure the horse began to be restive; however, I persevered until I felt it move, and then I kept it going until I had only about one foot of the probang left out, then I withdrew it, thinking it would pass the remainder of the journey without any aid. I had him turned round again and waited a few minutes to see if all was right, but to my sorrow the gulping and attempts at vomition returned as severe as before. Nothing daunted, I had him turned to the door again, and went through the same process, this time passing the probang to the end. When I withdrew it I was not a little amazed to see some

blood on it, which I quickly removed, although I felt somewhat confident that I had done no serious damage. I now drenched him with a few mouthfuls of water, which he easily swallowed, made him as comfortable as possible, and left him for two hours. On seeing him again I found him very dull and heavy, most of which I attributed to the long journey which he had done that day. Seeing that I could do no more I left him until the morning. Upon my visit next morning I found his pulse and temperature normal, and that he had partaken of a bucketful of gruel. I ordered a sloppy diet until I saw him again next day. He was then to all external appearances in his usual state of health. I ordered the slop diet to be continued, and in two days the horse was at work again and has since been in a perfect state of health. As I mentioned before, the reason why I relate this case is that passing the probang (and the one I used was a very large one) in the horse whilst standing is a very rare thing, and as the case terminated successfully I thought perhaps it might interest some of the readers of the VETERINARY JOURNAL.

A Peculiar Case.

The subject of the above case was a cow which had suddenly hung back on the chain after being milked in the evening. She was, however, immediately released, placed in a loose box, a messenger being sent off for me. Upon asking him what she was like, he told me the above, and also that, after putting her in the loose box, she began to chew the manger, and that a copious flow of saliva came from the mouth. Thinking that there was some brain affection, and not being able to go straight away to see her, I sent the following draught, to be given at once in a pint and a-half of cold water:—Chloral Hydras., Pot. Brom. $\frac{\ddot{a}\ddot{a}}{aa}$ 1 oz., Aqua ad. 8 ozs. Upon my arrival I found the above symptoms to be correct, except that now she was chewing the iron ring of the rack chain. I found her temperature to be 104·2 Fahr., pulse 60, eyes staring and prominent. I then examined her mouth thoroughly, thinking, perhaps, there might be some foreign body giving rise to the irritation; however, this was not so. Soon after this she began biting her off fore arm, and now I must confess I was a little puzzled, from the fact that a few months ago a rabid dog had bitten several cows in the adjoining field to which this one had been grazing at that time, the dog being afterwards destroyed, and declared to be suffering from rabies. I began to think that my case

was one of rabies in the premonitory stages. However, I gave her the benefit of the doubt; and for the time being, assuming the case to be one of brain affection, I decided to bleed her. This I succeeded in doing with a little difficulty, considering I had to do all myself, as no one else would go near her. This done, I left her for two hours. Upon going to see her again I found her chewing the door. Having got her away, I opened it, and found her much the same. She had almost bitten all the skin off a portion of the forearm. I told the owner I could do no more that night, so decided to leave her, which we did after having barricaded the door, and see what the morning would bring forth. When I arrived at the place next morning the owner met me in the yard with a beaming smile on his face, which I was sure indicated improvement in the cow, and told me that when he went to see her that morning she was chewing her cud, had given a can full of milk, and eaten a fair breakfast. I saw her again on the 13th, and she was in the usual state of health. Now, I should like to ask some more experienced reader, or readers, of the VETERINARY JOURNAL, what in his or their opinions was the true nature of this case? For I must confess that I am at a loss, never having seen nor heard of a similar case before.

ON A CASE OF MULTIPLE EXTRA-UTERINE GESTATION WITH OSSEOUS EMBOLISM OF THE PULMONARY ARTERY.*

BY JAMES SPREULL, M.R.C.V.S., ALFORT.

ON the 30th December last there was brought to the consultation of the Alfort Veterinary School a small pointer bitch, about eight or nine years old, which for the last fortnight had evinced much difficulty in micturating. At the same time her belly had increased in volume, especially towards the inferior parts, simulating ascites. The appetite had disappeared and the animal was rapidly becoming thin.

I examined the patient carefully and was not long in discovering in the mammary region, a little outside of the median line and in front of the groin, a cicatrix with indurated and nodulous borders which, in my opinion, resulted from the removal of a neoplasm some time before.

Besides, palpation showed the existence on the posterior

* Translated from the French of Victor Drouin, Assistant Professor at the Alfort Veterinary School, France.

surface of the liver, towards the right hypochondriac region, of hard tumours adherent to the organ, whilst other still harder new formations seemed to float in the peritoneal cavity.

These symptoms seemed to me perfectly concordant and demonstrative; the cicatrix, ascites, tumours, rapid wasting and the age of the patient, all seemed to converge towards the diagnosis: cancer of the liver, or rather cancerous generalisation in the abdomen. And I attributed the retention of the urine to the presence of a neoplasmic mass upon the neck of the bladder or upon the organ itself.

When questioned, the owner declared that he had had the bitch in his possession for nearly two years. Bought from an English breeder, she presented at the time of purchase the already mentioned cicatrix. The breeder had even said that she had been spayed.

But about a year after the sale she became suddenly in heat; she was lined, her belly enlarged, and she presented all the appearances of normal pregnancy. Nevertheless, the second month elapsed, then a third, without anything being seen to appear; on the contrary, everything regained its natural state and the belly diminished in volume. The owner then thought that he had been mistaken, and that all the more readily since he had believed the animal was spayed.

It was not till a year after this incident that symptoms were presented anew, and that I was now consulted. What had happened was forgotten, and consequently all this was not reported to me. It is, however, very probable that the information would hardly have influenced my diagnosis.

As I have already said, I diagnosed the case as one of generalised cancer, and did not hesitate in advising slaughter, which was done accordingly.

The autopsy had its surprises in store for me.

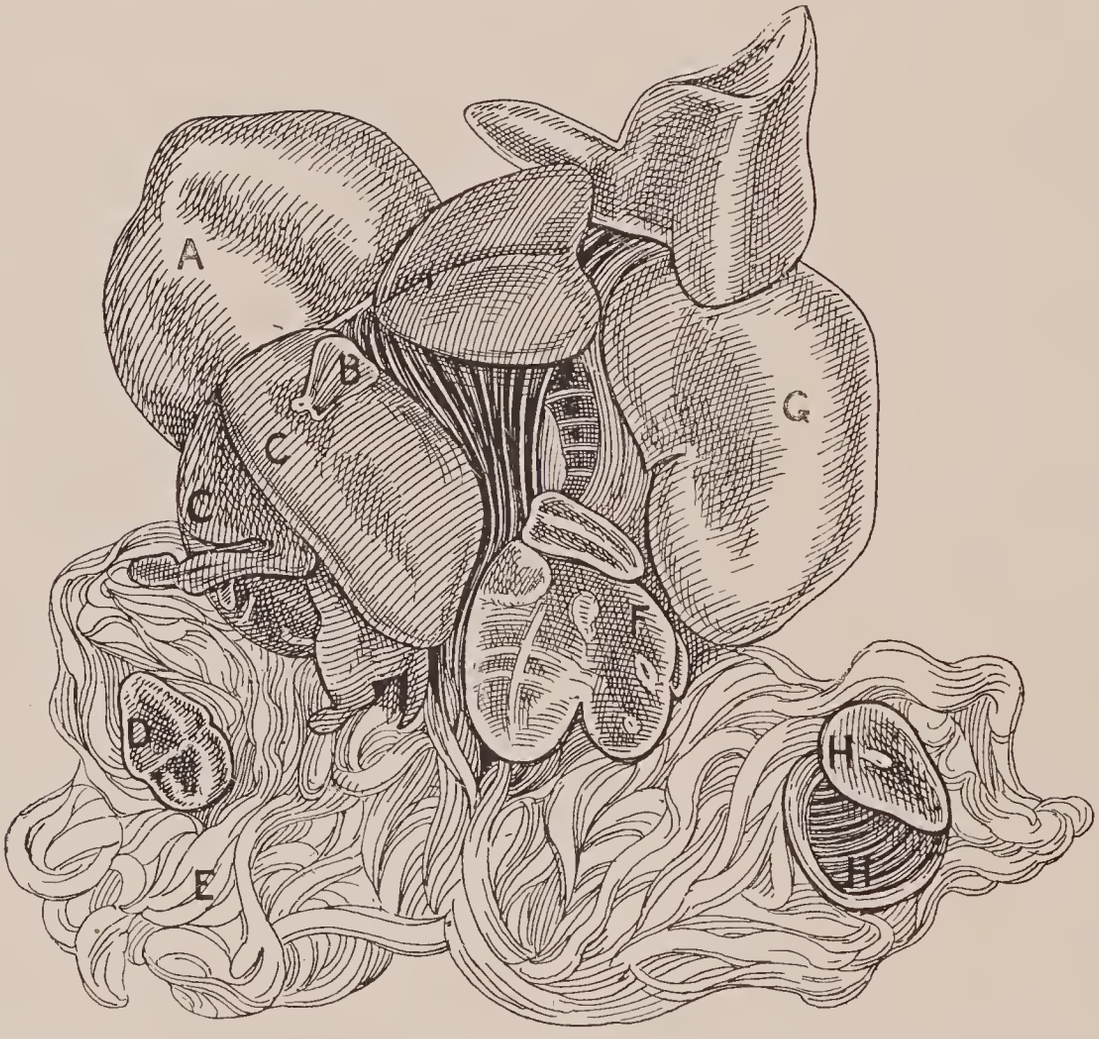
Autopsy.— In the abdominal cavity I first found a goodly number of small bodies, either floating free or adherent by epiploic bands to different organs. A very short examination sufficed to recognise in them the bones of a fully-developed fœtus. Upon the liver a perfectly developed scapula adherent to Glisson's capsule, elsewhere there were portion of limbs, etc.; then larger bodies, which represented calcified fœtuses, heads, chests, and vertebral columns, in fact, beautiful examples of litho-pædium.

Lastly, adherent to the posterior surface of the liver, two fibrous capsules, containing two other fœtuses perfectly developed and preserved in all their entirety; all the soft

structures were in their proper place; the skin was intact and covered with fawn-coloured hair, which adhered in some places to the envelopes.

But no part of a placenta or umbilical cord was present.

The womb had only one horn with its corresponding ovary, the other had disappeared. Finally, this remaining horn was closed at its junction with the womb, and perforated at some distance from it.



(*a*) Right lobe, (*b*) Scapula, (*c*) Fœtus and its capsule, (*d*) Fœtal head, (*e*) Omentum, (*f*) Fœtus (*g*) Left lobe, (*h*) Fœtal head and thorax.

This photograph, taken from a drawing in chalk, represents the liver, attached to the posterior surface of which are seen two fœtuses and a scapula, whilst parts of two others are seen entangled within the folds of the omentum.

The examination of the lung was not less interesting. When separating the auricle from the ventricle, I felt a resistant body, and when the separation was complete I saw emerge from the peripheral end of the pulmonary artery a bone $\frac{4}{5}$ inch long and $\frac{1}{12}$ inch thick, strongly adherent by fibrous bands to the vessel wall.

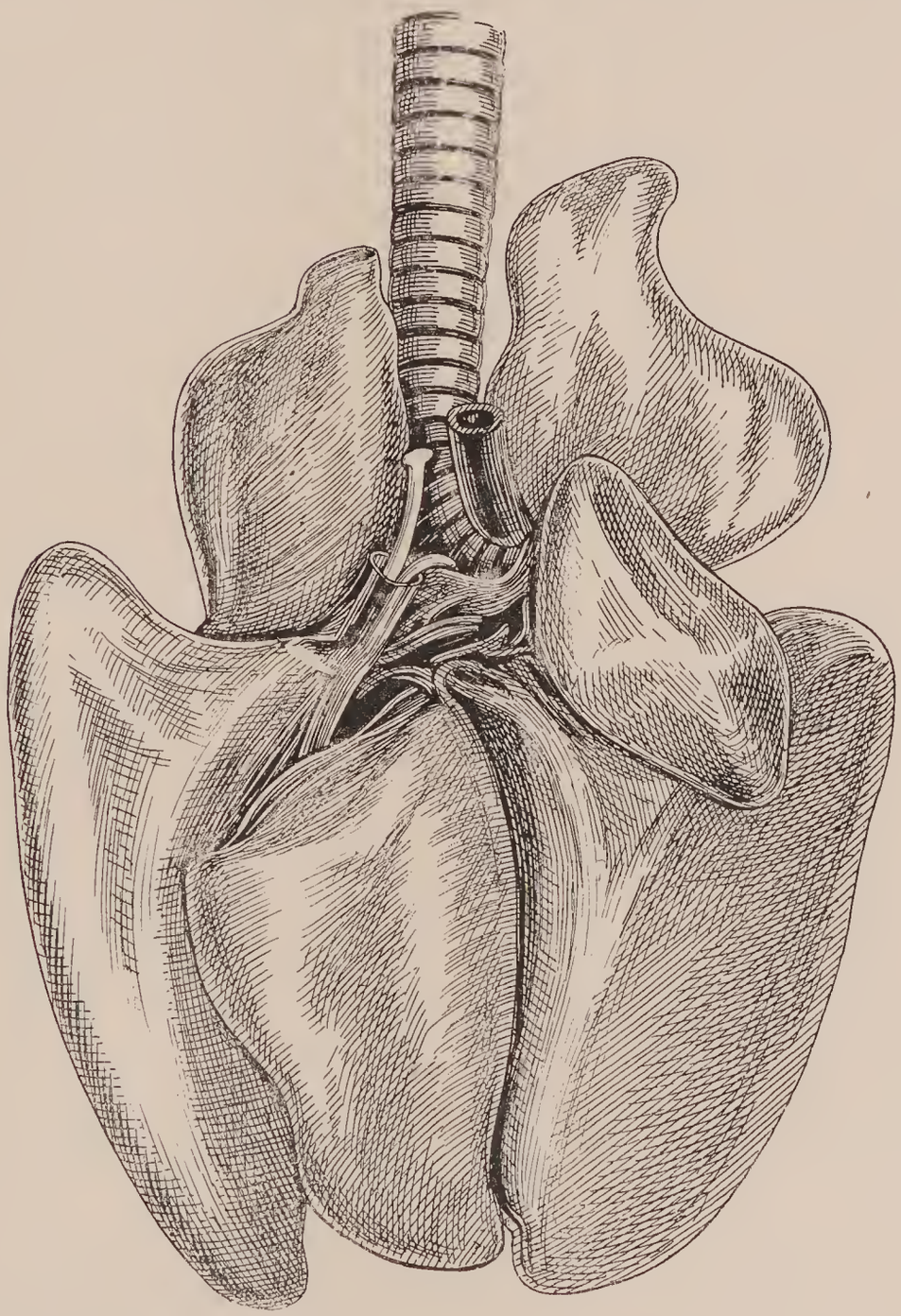
How can all these anomalies be explained?—This is probably how it came about.

Before purchase an attempt had been made to spay the bitch. One ovary with the horn of the same side had been

removed, and it was through the abdominal wound that this operation had been performed.

Eventually the bitch was lined when in the possession of her new master, the remaining ovary furnished the elements of fecundation, and gestation began in the womb.

But at the time of parturition the cornu was torn and the six fœtuses fell into the peritoneal cavity, to fix themselves,



This photograph was taken from a drawing in chalk, and represents the lungs seen on their inferior surface; the bony embolus is seen in the pulmonary artery, and to the right of it is the aorta.

some upon the liver, others upon the omentum. The first, rapidly surrounded with a fibrous capsule, were preserved intact; the others were not long in calcifying in their trunks, whilst the branches of the limbs became detached and remained free in the abdomen.

Finally, the pulmonary embolism is easily explained. We know with what facility the bones of ectopic fœtuses pierce the wall of the bowel or the abdomen; it is therefore not surprising if one of these bones had perforated slowly into the posterior vena cava. Drawn by the blood stream into the right auricle, it passed into the right ventricle, from which it was expelled through the pulmonary artery; the narrowing of the vessel preventing its further progress.

Again it is not without interest to remark that the presence of these ectopic fœtuses for a year in the abdominal cavity did not at all injure the general state of health, much less the existence of a voluminous osseous fragment in the pulmonary trunk.

The disease from which the bitch actually suffered was acute cystitis, of quite recent origin.

SUBCUTANEOUS EMPHYSEMA.

BY HENRY SNARRY, M.R.C.V.S., YORK.

THE first case I remember was in the year 1877, whilst practising in Selby.

The order was to go to a cow with supposed felon. On arrival, the animal was dull, off her food, and somewhat stiff when she moved or turned; there was something about her I did not like, and which I cannot explain now, as I made no notes, though I cannot forget the case altogether. I was mostly struck by noticing a firm and movable enlargement (size of a billiard ball) under the skin on the right side of the chest. I manipulated it, and moved it under the skin in different directions for several inches. I was inclined to think she had had a blow.

The next day she appeared no better, but swollen on the side where the enlargement was, and which on manipulation crackled.

The case went on a few days, and the emphysema increased until it extended over the greater part of the body. In some parts it projected in large bullæ (the skin distended 4 to 6 inches from the body, and about 2 feet in circumference).

I lanced several of the large swellings and pressed out as much gas as I could. The breathing became affected, short and catching, the air being expelled by a double effort exactly as seen in broken wind.

I felt certain, and expressed my opinion to Mr. Wright (unqualified practitioner, whose practice I was trying), that

the peculiar breathing was consequent upon the formation of gas in the interlobular tissue of the lungs, as it was under the skin, and thus obstructing the natural elastic recoil of healthy expiration, and calling in the aid of the abdominal muscles. The animal died. The treatment was a cathartic, chlorate of potass, turpentine.

Post-mortem showed the lungs healthy in colour, but very large and light. The interlobular tissue very distinctly showed the presence of gas and the more or less separation of the lobules.

The next case I saw was on February 17th, 1880, at Haxby.

It was a cow which had been attended by a quack for several days.

When sent for I was told she was off her food, dull, head down, breathing quick, and grunting.

I found her as stated, and that she was near calving. There was no unhealthy sound in the chest.

After a few days I noticed emphysema on the loins (first the right). It gradually extended along the withers, sides, udder, thighs, &c. Sometimes it would go down in places and be larger in others.

She calved on the 20th February, and it seemed to weaken her and throw her back a good deal.

For the first two days I gave her ammonia carb., nux vomica, pot. nit. and gentian, and when the fever was high and breathing bad I gave aconite and ether. I used mild liniment to swellings, as matter of form; on recovering, tonics —iron, carb. ammonia, etc.

The last visit was March 12th. She eventually did well, and got quite fresh and fat.

Next case. (Copy of a letter from my father, April 5th, 1880):—

"I have a case of a cow at Thorpbasset, dropped day after calving. When I saw her at night, on April 1st, she was stupefied. I ordered her a bottle of whiskey at twice. Saw her next day; a great deal better.

"I gave her ether and nux vomica, 2 drs. every four hours (6 doses). Next day, was much better; stood on her fore legs, but could not get up. Passed fæces twice.

"I then sent her 5 drs aloes with ½ oz. oil juniper. Saw her this morning, and found her swollen all over, her *head, and neck, back and sides*, crackled under the skin.

"She had a deal of pain in the night. When she had the aloes, etc., she seemed quiet; ears and horns hot. Could not feel pulse for swellings." Case died.

Recent Case.

September 6th.—A cow, the property of Mr. Abel, Haxby, has been on new fog three days. The second day was noticed to breathe rather quickly, but was not taken any notice of, turned into the fog again.

On the third night, September 5th, she was noticed to be worse, so was taken into the cow-shed, and a pint of ol. lini. administered. In the morning, September 6th, another pint of ol. lini. was given. At dinner time (12 o'clock), seeming no better, ½ lb. of salts was given, and another ½ lb. at 4 o'clock in the afternoon.

The order came to see her; my pupil went and saw her at 5.30 p.m.

Found her standing with her nose against a pole, and breathing very heavily. She had not passed any fæces during the day; pulse quick and rather weak, horns and ears warm; had eaten some mash and drunk some chilled water.

The air was expelled from the right lung directly it entered, and the left lung was not so bad—more air coming in, and there was a healthy sound. I gave aconite 10 m., spt. eth. nit. 1 oz., ol. lini 6 ozs., and ordered 1 oz. tr. opii to be given in three hours time. [The above are all my pupil's notes, and he said I would see her same night. I did not return from Scarboro' until 11.15 p.m., so after his report I left her until next day. He said she was bad on her right lung.]

September 7th.—I saw her at 10 a.m. Temperature 101°, pulse about natural, and appearance brighter. She had purged during the night, and passed a quantity of wind, which was very fœtid, after which she was easier. The owner said it was nothing but obstruction, and as soon as she got relief she was better. When I examined her chest there was no unhealthy sound, though somewhat quickened breathing, and especially on right side. I detected on the lower part of right side a swelling, which was emphysematous, about a foot and a-half in diameter. I immediately felt on the loins (where I consider it always commences), and found the same condition to exist on the left loin, but not so much as on the right chest.

I gave ammonia carb. sol., ether, tr. bellad.

September 8th., 11 a.m.—My pupil saw her. Temperature $101\frac{2}{5}°$; pulse not so quick and stronger; bowels natural; eating well. The emphysematous swelling on the chest not so prominent, but covering more area, and not so much on the lumbar region; the breathing a little accelerated.

Case recovered.

SURRA.

SURRA (which signifies in Hindustani rotten) is a specific febrile disease caused by the presence in the blood of a hæmatozoon *(Trypanosoma Evansi)*. It originates spontaneously in solipeds and camels, and is capable of being transmitted by inoculation to other animals. But it is neither contagious in the ordinary sense of the word (although capable of production by gastric ingestion), nor infectious. At present the disease has only been recognised and investigated in India and Burma, but it probably occurs in most parts of Southern Asia, and not unlikely in East Africa, Australia, and America, where the country is low-lying and swampy or subject to inundations. It chiefly occurs in India and Burma after the rains (July or August), and continues up to January, during which period it frequently assumes an epizootic form.

Symptoms.

We seldom have the opportunity of witnessing the early symptoms of Surra, the attack usually being a mild one of fever with the animal a little dull and off his feed, but after a few days' rest it apparently recovers. The owner does not consider the case anything uncommon or one requiring professional aid, and the horse frequently goes back to work again. But when the symptoms recur, or possibly after several recurrences, or the original ones become more aggravated and we are called in, we notice the following:—

The attack is somewhat of the bilious fever type, the animal being dull, listless, and leg-weary. With the rise of temperature, or shortly following it, there is generally an attack of local or general urticaria. The mucous membranes become yellow and petechiæ occur on one or the other, but these are not persistent, generally leaving entirely during the intermittent stage of the fever. The conjunctivæ, and particularly the membranæ nictitantes, have a dirty yellow appearance with large purple petechiæ or extravasations upon them. These are also sometimes found on the vulvæ of mares, and when well marked are very suggestive of the disease. There is generally some œdema of the limbs (particularly about the fetlocks and hocks), beneath the belly, chest, and sheath. The animals rapidly lose strength and condition, but the appetite remains good, except when the fever is very high, and even then green forage is eaten freely They invariably suffer great thirst, and advantage is taken of this in administering medicine. The fæces are, as a rule,

normal throughout the attack, but occasionally there are signs of constipation and hepatic disturbance, and, at the termination of the disease, diarrhœa. The urine becomes viscid and of a dark yellow, orange, or orange-green colour, and frequently contains albumen and blood. Signs of catarrh are sometimes present, with a yellow-tinged mucous discharge from the nostrils ; eyelids swollen and perhaps conjunctivitis lachrymation may be very profuse towards the latter end of the disease, and slight hæmorrhage occasionally takes place into the anterior chamber of the eye, followed by an opacity. Ulcers are sometimes found on the Schneiderian membrane, and the submaxillary glands enlarged. The respirations are usually proportionate to the amount of fever, but there is seldom much distress, although the lungs are occasionally found to be more or less affected, and towards the end of an attack the breath may become very fœtid.

The fever is of an intermittent, remittent, or relapsing character, and during the paroxysm of fever if the blood be microscopically examined, parasites may be seen working about eel-like among the corpuscles and attacking the red ones. These disappear more or less suddenly, and with them the fever subsides. But with the recurrence of fever they appear again, at first a few, but swarming towards the height of the attack. At first the blood appears to be normal, but a peculiar vibration may be observed caused by some rapidly moving indefinable organisms among the corpuscles—later on the white corpuscles increase in number, and the red ones from the attacks made upon them by the hæmatozoa get irregular in shape, many of them appearing to be simply irregular granular gelatinous masses of a pale colour which form into irregular *rouleaux* or masses, and in the last stages of the disease the fluid portion of the blood has occasionally been observed to take a faint rusty tinge.

The hæmatozoa vary in size, but are, as a rule, about one-third the diameter of a red corpuscle in thickness, and six or eight times its diameter in length. They are white in colour and have a round, eel-shaped body tapering to either end. The front portion apparently ends in a somewhat stiff neck and blunt head, while the back part tapers off into a long, fine, mobile tail. Its mode of progression is naturally head first with an eel-like motion, but when worrying a corpuscle it frequently moves backwards, dragging the corpuscle with it. It can be seen swimming about freely and forcing its way with great perseverance among masses of corpuscles until it selects one to attack (invariably a red one), it then

takes hold of it and tears and worries it as a dog would a rat. The means by which it grips the corpuscle has not yet been demonstrated, but as its hold is sufficiently strong for it to shake two or three corpuscles about freely or move a moderate sized *rouleau* it apparently must be armed with more than the ordinary sucker. The hæmatozoa disappear more or less suddenly from the blood and remain absent from one to four or even six days. These periods of remittance are very little marked in some cases except in the fall of the temperature and absence of the hæmatozoon, but in others a decided improvement takes place. The œdematous swellings reduce in size. The petechiæ leave the mucous membranes, which become very anæmic or even blanched. The animal looks bright, moves freely about the box and is often capable of taking a considerable amount of exercise, but in a few days our hopes are dashed to the ground again. The animal becomes dull, the coat stares, the m.m. becomes yellow, the petechiæ and extravasations recur, the temperature rises, the hœmatozoa appear, the heart's action becomes irritable and (if nearing a fatal termination), weak with frequent and often distressful anæmic palpitation. In fact, all the old symptoms recur, but in a more aggravated form, the animal becoming each relapse less able to resist the attacks of the hœmatozoa, and towards the last is often affected with partial paralysis of the hind quarters, absolutely refusing to move and when made to do so swaying about as if it has no control over its hind legs. Although the appetite remains good or even voracious quite to the end, there is a remarkable falling away in the condition of the animals, those that live over a few weeks invariably becoming veritable bags of bones. Death comes sometimes quite suddenly and unexpectedly, probably owing to some complication, or the animal becomes delirious, falls and struggles for hours, and dies from exhaustion; occasionally it falls and dies in great agony.

The length of the disease (except in those cases which die very early, apparently from the shock of the first attack of the hæmatozoon) is generally proportionate to the animal's age, constitution, and condition. An old horse in hard work and bad condition very speedily falls a victim, while a young one in good condition will sometimes struggle on for several months, passing through seven or eight paroxysms. Each paroxysm generally lasts about seven days, but in some cases it is only two and in others it may be as many as twenty.

Thus in our diagnosis of Surra we have the history of the

case: the general appearance of the animal (the emaciation, urticaria, œdema, etc.), the fever, the petechiæ, or purple extravasations on the visible mucous-membranes, all of which combined point to the disease, and it only remains for us to demonstrate the presence of the hæmatozoon which alone is diagnostic of Surra. But it must be remembered that this is not always present in the blood, therefore it must be carefully watched for until a paroxysm of fever occurs, when two or three cover-glass specimens of blood should be examined daily, and if after ten or twelve days' careful examination the hæmatozoon is not found, the disease is not Surra.

Prognosis.—Until quite recently invariably fatal, no case having been known to recover; but during the last year Professor Lingard, the Imperial Bacteriologist to the Civil Veterinary Department of India, has been carrying out further experiments with arsenic, and has been fairly successful with that drug in cases that come into his hands early, are fairly young and in good condition—others he considers hopeless.

Cause.—The entrance of the *Trypanosoma Evansi* into the blood is recognised as the *vera causa* of Surra; but the method by which it gains access has not been satisfactorily proved, as it has never been found either in food or water; however, experiments have proved that in from five to seven days after the gastric ingestion of infected blood the hæmatozoa are found in the blood of the patient.

Natives attribute the disease to the bite of a large species of gad fly, and while admitting that this might be true in some cases where the insect came straight from an infected animal, all European authorities (Evans, Steel, Pottenger, Gunn, and Lingard, etc.), are unanimous in attributing it to either the water or food supply, particularly the former, as it is well known that stagnant water is most favourable for the production of infusoria, and the stagnant pools and wells which are so numerous all over the country after the rains offer the simplest and easiest method of introduction into the system. Next, as regards the food supply, the grasses and vegetation grown on swampy ground are the most suspicious. Professor Lingard has carried out some interesting experiments with rats. He found that 30 to 40 per cent. of rats contained in their blood a hæmatozoon apparently identical to that of Surra, and that these appear and disappear from the circulation as in the horse. He subcutaneously injected some of their blood into horses, and although the incubative stage was longer than that obtained by the same process

with horse blood (being 63 days), yet the virulence of the disease when once developed was intense. He next tried experiments on the gastric ingestion of rats excrement and got positive results, but the incubative period was four months. This points to the probability, or at any rate possibility, of many of the Surra cases being contracted through the ingestion of rats excreta mixed with the grain. He also found that the hæmatozoa, although present in the blood of these rats all the year round (periodically), were much more numerous after the monsoon (rains), and that the blood of rats from certain districts were almost always free from these hæmatozoa, while that of the majority of rats from other localities was affected.

Post-mortem.—There are not any really characteristic lesions of this disease found *post-mortem* in India; but Steel, Shaw, Frost, and others who investigated the disease in Burma, reported that there was generally ulceration of the stomach, particularly the left sac, this ulceration sometimes being very extensive, large patches of the internal lining membrane being eaten away, and having the appearance, as Frost aptly describes it, of a piece of leather denuded of its outer film by cockroaches.

The body is much emaciated, all the internal organs in a very anæmic condition. There is a general tendency to yellow or orange-coloured staining of the tissues. At the base of the heart there is almost invariably a deposit of orange-coloured, gelatinous material, and the cavities of the heart contain clots of a yellow, green, orange and purple colour, bathed in dark tarry blood. The lungs are often emphysematous and sometimes the seat of local inflammation. There is occasionally a considerable increase of fluid on the spinal cord, about the lumbar region, which would probably account for the symptoms of paralysis sometimes present. The kidneys are often pale, flabby, and covered with petechiæ.

Treatment and Preventative Measures.—Before the germ of Surra was discovered the disease was looked upon as a form of malarial fever and treated as such, but since the discovery of the *Trypanosoma Evansi*, veterinarians have recognised it as the true cause of the disease and have directed all their efforts to its destruction. For this purpose carbolic acid, iodine, cinchona, alkaloids, mercury, arsenic, iodide, bromide and bichromate of potassium; quinine and arsenic, and various other agents were employed, but all to no purpose, the disease proving invariably fatal in equines and camels. But one marked effect was noticed in the employment of

arsenic, and that was that the period of intermission was considerably prolonged, and acting on this Professor Lingard decided to give it a further trial with, as already stated, a considerable amount of success. He employs it in the form of liq. arsenicalis (Fowler's solution), and only attempts to treat those cases that come to his notice early in the disease and are in good condition, others he considers hopeless.

In his "Summary of further report on Surra," 1895, to the Inspector-General of the Indian Civil Veterinary Department, he gives the following treatment :—"In most cases of Surra in equines a dose of five grains (arsenic) may be commenced with and given twice daily for forty-eight hours, the quantity being increased by half a grain after every four doses have been administered, until seven grains are reached. The latter amounts should be continued twice daily for seven days, in the case of an animal below 800 pounds in weight, but in Australians of 1,000 pounds weight and upwards, the dose may be increased to the addition of half a grain up to nine or even ten grains twice daily for the same period. The dose should then be gradually reduced by half a grain or one grain according to the condition of the patient, until a four grain dose has been reached. Again, if possible, after a period of two days, repeat the treatment, increasing and decreasing the dose of arsenic as above described. But the fact must never be lost sight of, that if arsenic be administered to an animal for a prolonged period, symptoms of gastric irritation will supervene sooner or later. It has been found that by giving kaunji (gruel) to the animal morning and evening directly after the medicine, the above-mentioned symptoms have not made their appearance; consequently it would be advisable to give kaunji to the animals from the commencement of the arsenical treatment. Acute desquamative nephritis is a common complication of Surra, but it must not contra-indicate the administration of arsenic, although the maximum doses cannot be maintained, otherwise the animal will have a relapse, and ultimately succumb to the disease."

Advantage is taken of the animals thirst to administer the liq. arsenicalis in its water. As soon as the organism disappears from the blood gentle exercise should be given, increasing it daily according to the animal's strength and condition, and this, combined with massage, soon removes the œdema.

As regards prevention, the first care should be a supply of good, pure water; and, if there is any doubt about this, it should be boiled.

The grain should be carefully screened and cleaned to remove any rats' excreta. Hay should be obtained from the uplands in another district from that infected. All green forage, such as lucern grass, should be avoided during and after the rains. Stables should be built on high ground well away from swamps.

Diseased animals should be isolated, and thin dung burned. The carcases and stable litter should also be burned.

The stables should be kept as free from rats as possible.

THE CLYDESDALE HORSE SOCIETY.

THE annual meeting and dinner were held in Glasgow, on the 6th February, Sir Robt. D. Moncrieffe, Bart., presiding. The after-dinner speeches were numerous, not the least interesting being those by Principal McCall, Glasgow Veterinary College, and, in reply, that of Mr. Lumsden, one of the leading directors of the Highland Agricultural Society. We are indebted to our excellent contemporary, the *North British Agriculturist*, for the following reports of them : —

Principal MCCALL gave the "Highland Society," coupled with the name of Mr. Lumsden, one of the directors. For almost thirty years he said he had watched practically every step taken by the Society. He observed only the other day that the Society had £80,000 of funded capital behind it, and for that he would give the pecuniary management the greatest credit. But it should not be the main object of a Society like the Highland Society to accumulate funds more than what was actually needed for its purposes. He did not think it was incumbent to build up such a large reserve for those who were to come ; in fact, he was not at all certain that posterity would not benefit more by having some part of that large sum spent just now than left over in cash. When he compared the Royal Agricultural Society with the Highland Society he was not satisfied. The Royal Society gave annually a grant of £500 to the Royal Veterinary College for research. That money had, he believed, been paid back over and over again in the work accomplished. If they referred to the pages of the Royal *Journal*, they would find articles contributed twenty years ago which held good even at the present time. What had the Highland Society done for research? Practically nothing. Work of this kind was never more necessary than at present. They had discovered antidotes for such malignant diseases as rabies and anthrax, and tests for such other diseases as glanders and tuberculosis. What they now wanted was a vaccine which would be a preventive against the two latter diseases. Such a vaccine was possible ; in fact, he was certain that before many years were over they would have an antidote for both glanders and tuberculosis. Might not some of this great accumulation of £80,000 be devoted to such a purpose as the discovery of that antidote? There was another point, rather a delicate one, but he had been asked to refer to it. Did they think it was right for the Highland Society to continue in its old practice of allowing prize tickets to be put on the heads of animals used for breeding purposes that were known to be unsound? The Royal Agricultural Society was again a

good example in this matter, every animal at the Royal Show having to pass an inspection for unsoundness before getting a prize. That was a wise and sound policy, and the directors of the Highland Society should really consider where they stood in this matter. Stallion owners would not buy a young animal that was unsound, and would very soon return him on the breeder's hand. Nevertheless, they had no hesitation in sending unsound animals round the country districts to work great mischief in this way.

Mr. LUMSDEN, in reply, said he was glad to hear from his friend, Professor McCall, that they had large funds at their credit. They must, however, remember that the Highland Society had to visit a number of small places which were not very profitable. If they were not careful in spending and keeping something back they would soon be in a similar position to the Clydesdale Horse Society. With regard to spending sums on the veterinary profession, he thought it would be a good enough thing, but it should come more from the Government. They spent a certain sum when all the cows in the country were slipping their calves, and tried then to find out the cause. They were told that if they would spend another £100 they might, perhaps, learn something. The veterinary inspection of all animals in the showyards struck him as being a rather big question. They could not stop at horses; they would have to go on and test all the cattle for tuberculosis. The system had by no means done so well in England as they seemed to think. A horse came up one year and was passed. Next year the same animal again came up and was condemned. What was the result? The whole of the progeny of that horse was virtually ruined. Veterinary inspection at their shows was, he believed, impracticable; and, at any rate, they might wait until the veterinary profession knew exactly what to cast for, and what not to cast for. The Highland Society had all along done well by the Clydesdale breed, and were giving liberal prizes, as usual, at Perth, this year. It would, however, be a long time before they gave prizes for the cross mentioned by Mr. Ferguson.

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

ADDRESS BY THE PRESIDENT, J. H. CARTER, ESQ., F.R.C.V.S., BURNLEY, LANCASHIRE.

GENTLEMEN,—Permit me in the first place to return you my sincere thanks for the honour you conferred upon me at the last quarterly meeting by electing me to the presidential chair of this Association, and I trust during my year of office, peace, contentment, and goodwill may continue to dwell in our midst as hitherto. When I look back and remember the eminent practitioners who have graced this chair in years gone by, and the excellent manner in which the meetings have been conducted from time to time, I reflect and ask myself the question, have I been wise in accepting the responsibilities of office without a more mature consideration? My reply, however, voluntarily asserts itself in the affirmative, for I consider it should be the ambition of every individual member of such an Association to aspire to become its president sooner or later, as the case may be.

I accept your generous offer with pride, and assume the duties of that office made doubly illustrious by the virtues and fame of my predecessors, impressed with the broad wisdom of their plans, and far-reaching foresight of their genius.

With what powers there are in me I pledge myself to continue and carry out to the best of my ability the duties which devolve on me as president.

Well, gentlemen, I believe it is customary at our annual meetings for the president to give a *résumé* of the work achieved during the past twelve months, but before attempting to do this, there is one thing in particular I should like to mention, and especially at this our annual gathering. To those members who attend most regularly our quarterly meetings, it cannot be but patent there has unfortunately been a falling off in the attendance. When you come to consider we have about 85 members of this Association, and our meetings only muster on an average some 20 to 25 members, I have come to the conclusion there must be a cause for this irregular or non-attendance, and I propose during my presidency to try and find out what that cause is, and if in my power to remedy it, and I entreat you, gentlemen, to give me your assistance, by attending more regularly our quarterly meetings, when I feel sure this Association, of which we are justly proud, will retrieve its position of being the leading and most weighty Association in the United Kingdom, and will again hoist its standard to that lofty position as to create the envy of all kindred associations. Without egotism, gentlemen, I purpose to maintain the high reputation this Association has always enjoyed, and if in my power to still further enhance that reputation.

So far as I shall succeed therein I know not, time alone will prove, but I do sincerely trust my aid in this direction may be the means of making our Association strong, useful, and honoured. In asking your co-operation in this task, it is gratifying to know I shall have the earnest, loyal support of every officer and member; let us then, one and all, to his fullest ability, do his share to maintain in greatness, and extend in usefulness this Association. I have now given you a rough outline of the task I have taken in hand, and which I purpose carrying out, so I will not weary you any further upon what may be considered good designs, if good results attend them.

We will now pass on and briefly review a few of the principal scheduled diseases afflicting our stock in Great

Britain during the past year, 1895. It is gratifying to know that not a single case of *Pleuro-pneumonia* or *Foot-and-mouth disease* has been recorded in Great Britain during the past year.

Anthrax.—This disease has not been so prevalent as in 1893 or 1894, but higher than in 1892.

Glanders.—More numerous than in 1894, but less than the two preceding years. The greater proportion as usual occurred in London.

Rabies.—This terrible disease shows a great increase as the following will prove :—

In 1892	..	40	cases only recorded.
1893	..	94	,, ,,
1894	..	258	,, ,,

and 1895, the alarming total of 723 cases, cases in 1895 being three times as numerous as in 1894.

Well, gentlemen, is not this alarming increase of this dreaded disease sufficient to warrant more stringent measures for its suppression ? I emphatically say yes, and it should be done at once and without a moment's delay.

The only way, in my opinion, to eradicate this disease, would be to inflict a higher dog tax. This would have a very desired effect, viz., by ridding this country from a lot of worthless, half-starved street wanderers, that are neither use nor ornament, but a positive every day danger in our streets ; to institute a general muzzling order throughout the country for six or even twelve months, if necessary ; all dogs to wear one regulation muzzle bearing the Government stamp, and no other muzzle to be recognised by the police authorities, and all offenders infringing or breaking the order to be severely punished.

Swine Fever.—The position with respect to this very interesting disease is anything but satisfactory, notwithstanding the fact that during the past year 70,000 pigs were slaughtered on account of the disease, whilst about 11,000 died. This is in excess of the year previous, 1894, by about 3,686 pigs.

The mortality from this disease during the past four years has increased alarmingly year by year, in spite of all the precautions issued by the erroneously so-called Animals Department of the Board of Agriculture.

As you are aware, since December 1st, 1893, the Board of Agriculture has been dealing with this disease—instead of local authorities, as hitherto—so far as slaughter and compensation are concerned, in a very energetic manner. And what has been the result ? I say, without fear of contradiction,

that it has been one of the most miserable fiascos of modern times. And can it be wondered at, when we take into consideration the great lapse of time that has existed between the first report of the disease and consent for slaughter? In many cases a week or more has elapsed before such consent has been granted.

I have witnessed some most revolting sights during this outbreak of swine fever. One case, in particular, where upon my arrival I found the few remaining living pigs actually lying upon their dead companions, the farmer having had strict instructions from the police officer that they were not to be disturbed until the Board's inspector had been. I may say, gentlemen, I took the law into my own hands and had the dead animals immediately removed and buried. It is now twenty-six years since the Veterinary Department of the State had its duties assigned to it, and during that time cattle-plague, foot-and-mouth disease, and pleuro-pneumonia has succumbed to its energetic work, and doubtless swine-fever, instead of costing the country £200,000, would have been completely eradicated, at less than one-quarter of this amount, had the old system of treatment been carried out, instead of this uncalled-for interference.

Advertising.—This is a subject that has for a long time been under consideration by the veterinary profession and the Council of the Royal College of Veterinary Surgeons. This latter body have recently passed a bye-law declaring that such practice (advertising) is disgraceful from a professional point of view.

Well, gentlemen, there is, if I may so put it, advertising and advertising; by so saying do not misunderstand me and run away with the idea that I uphold or advocate such procedure, for example, as advertising in the local papers, inside tram cars, issuing pamphlets of so-called specifics broadcast, and many other such methods of advertising too numerous to mention here.

But on the other hand, gentlemen, when you come to consider the great competition that exists amongst certain, shall I say, quack medicine vendors all over the country gulling the public, having representatives attending all our cattle markets and fairs, issuing papers and pamphlets broadcast by placing them by the dozens on the tables of public houses frequented by farmers and stock owners, and the gentleman representing such cattle medicine firms being there in person touting for orders from your client right before your very face, I confess it must indeed be galling

and trying to the best of us, and more especially when out comes the order book and a good all-round order is booked of the empirical nostrums; and another very trying instance I have experienced, that of being called out in the middle of the night to a case, and upon arrival, after examining the animal, you enquire, "Have you given anything by way of medicine?" and you get the barefaced reply, "Oh yes, we gave one of So-and-so's black drink," or red drench, or some other outrageous name is given, followed by the remark, "I always have a box of these drinks by me, and when they fail to have the desired effect we send for you." This sort of thing is most encouraging, to say the least, but you have to swallow it.

Under such existing circumstances I do maintain, though I may not meet with universal approval, I say I do contend that we are fully justified, by way of self-defence (if we so wish), to issue a decent pamphlet, portraying our so-called specifics to our own particular farmer-clients; but beyond this I should strongly protest against such procedure being carried on.

Our city practitioners, and those in large towns with lucrative practices, have not to contend with such bare-faced opposition; but, on the other hand, to the hard-working country practitioner it is quite a different thing.

Then again I see no wrong in a newly qualified young gentleman, say, commencing practice in a strange part of the country, where he has neither kith or kin, inserting a card in the local paper to the effect, "Mr. ——, M.R.C.V.S., Veterinary Surgeon," and address.

Competition, gentlemen, is far different now-a-days to what it was in the early days of our forefathers.

To those gentlemen who are in affluent circumstances, whereby they can afford to purchase a good going practice, or say those who are fortunate enough to succeed to their father's already established practice, these gentlemen have no conception what it is to have to enter a strange town and there work—and it means ten years' hard work to build up and establish a successful practice—and, in many instances, to struggle against an old established and popular practitioner; and, as you are aware, this world is not over charitable, particularly to a stranger, as, doubtless, many of us have experienced.

It is in consequence of so many veterinary preparations of the so-called "Cattle Medicines" which glut the market, being offered to the public by parties totally unqualified to under-

stand the diseases of animals for which they so lavishly prescribe, that compels me to take up this attitude. I do think, under such existing circumstances, it is our duty, in the cause of humanity and in the interests of the stock-keeper, to offer to our individual farmer-clients (if we so wish) a list of veterinary preparations which may be used in the particular cases for which they are recommended, with benefit to the animal and with confidence by the stock-keeper.

If such procedure could be carried out generally it would, in due time, have the desired effect of exterminating these so-called "Cattle Medicine Vendors."

We are not alone, gentlemen, in committing this unprofessional act, for there is no method of advertising worked more energetically than the compilation of books; for can it be seriously maintained that the large number of medical works issued from the press are *bonâ fide* intended for the information and instruction of medical men?

Again, do we not constantly see in our daily papers paragraphs relative to the illness of prominent individuals, and the announcement of the medical attendant given with such fulness which leaves no doubt as to the ulterior motive.

Another class of advertisers are the men who give certificates to vendors of certain foods, soaps, and many other commercial commodities. These certificates are duly published in the newspapers, with many cunning additions. Many other instances could I cite, but time will not permit. So that you see, gentlemen, we are not the only profession who adopt this method of making ourselves and our commercial commodities known to the world. *Lucri causâ.*

Undoubtedly, from a professional point of view, the man who advertises takes an unfair advantage of his professional brother who holds himself aloof from such so-called degrading practice.

But then comes the question, How are you going to stop advertising? I am at a loss to know where you are going to draw the line; for I maintain if you stop one you must stop all, and even then you can only apply your stringent measures to members of our own profession. And do you not think this would be playing directly into the hands of the very men who do all the mischief by taking the meat out of the mouths of those who are most justly entitled to receive it?

It is a problem which will be difficult to solve.

Professional callings unfortunately are not what they used to be, and how much more advantageous it is to be engaged in trade, a glance at the list of Wills proved during the past

year will suffice. For instance, the average professional man is lucky if he can keep himself and his family during his life, and give his children a good education, and a decent start in life. He rarely, if ever, leaves a large fortune behind him, or buys one of the large estates thrown on the market; thanks to the depression in agriculture.

Even medicine and law, the two professions in which the largest sums are earned, seldom reward those who follow them with a fortune of, say, £100,000, and the lucky men who leave such sums behind them are rare indeed.

But the scene is changed when we turn to the fortunes made in trade. Among them £100,000 is a comparative trifle, and such amounts as a quarter, or half, or even an entire million are by no means out of the way.

The smaller fortunes made if a trader is at all successful, would be considered enormous if made by a professional man, while in the church, navy, and the army they would be absolutely out of the question. And yet the prejudice against trade dies hard, wonderfully hard indeed, when it is considered that the money made by the great brewers, ironmasters, and cotton spinners very frequently leads to a title, and to consequent effacement of the stigma of trade.

Money, too, and the ease and comfort it can bring counts for much more than it did even half a century ago, and in the public estimation it now very generally secures the respect which was formerly paid to the learned professions.

The three years curriculum at our colleges is now past history. Another year of study has been added; much has been said for and against this new departure. Personally, I look upon it as a distinct advance in the right direction, and cannot but materially enhance our professional status in the eyes of the other learned professions and the general public.

As education is acknowledged to be the prime factor in the formation of modern society, so on the education of the present veterinary pupil will the near future greatness of our profession depend.

The latter half of the 19th century has been distinguished for the great discoveries in all branches of science, but to no department can this be more truly applied than that of medicine. Within it there has grown up a study which five and twenty years ago was looked upon as a fad; to-day, gentlemen, it is a great science—I refer to bacteriology.

By the labours of Koch, Pasteur, and Lister the rôle played by germs in the causation of disease has been brought to light. Barrier after barrier has been successfully passed, and

now in some of the worst forms of epidemic disease, active warfare is being maintained successfully against microbes.

It is only within the last year or two that a rational treatment for successfully combating diphtheria and other allied diseases has been introduced.

As yet, however, the lay mind is prejudiced and conservative as to the new treatment, but there is no doubt that it is rational, and based on sound scientific evidence. This new treatment can prevent diphtheria, or cure it after it has begun, thanks to Behring.

The fever rapidly disappears, the obstructing membrane is removed from the throat, and the patient's condition is changed from one of extreme suffering to one of ease and comfort.

Children have been almost at the point of death one day, and completely relieved two days after, a thing unprecedented under the older methods of treatment. This principle of blood serum treatment so-called (serotherapy), happily does not confine itself to diphtheria alone.

Curative serums are now prepared for the treatment of pneumonia, tetanus, erysipelas, snake bites, and puerperal fever, and the results have so far been extremely encouraging and point to Behring's discovery as one of the greatest of the century, and one of the most important ever made in the history of medicine.

There are many questions of vital interest exercising the minds of the members of our profession at the present moment I should like to have entered into, but time is too scarce to permit at this juncture of a fuller inquiry.

There is, for instance, the Matriculation Examination, the Jubilee Memorial, the Royal Veterinary College for Ireland, Notification of Infectious Diseases, and the Royal Commission of Inquiry into Tuberculosis.

This inquiry has taken nearly five years to complete, and cost the country £7,500 to tell us something we already were in possession of. It recalls the old adage, "There's nothing new under the sun," and certainly, as far as this exhaustive and expensive inquiry is concerned, to my mind is only a recapitulation of facts that were already well known.

In conclusion, I now come to touch upon the melancholy part of my address.

The past year, as you are aware, has been most disastrous. It has removed from our midst two of our most venerable and highly-respected members of this Association. I refer to the late Mr. Thomas Greaves and Mr. Peter Taylor, both of this

city. Their loss cannot but be keenly felt, not by the members of this Association alone, but the whole profession throughout the Kingdom mourn their irretrievable loss: two names that for the past fifty years have been as familiar as any household word to the members of our profession; two men who may justly be deemed the founders and architects of this Association, for which their love and devotion to the last moments of their lives knew no wavering or abatement; men noble and pure-hearted, gentle in their affections, yet firm and resolute in their devotion to the right.

Death proved stronger than even their strong will and unwearying energies. Though they are gone from us for ever their work remains to attest their genius, their far-reaching foresight, their noble self-devotion.

All acts done by them for the good of this Association were actuated by a broad comprehension of its needs, an unselfish devotion to its interests, and an abiding faith in the loyalty and confidence of its membership. Gentlemen, allow me to express to you my gratitude for the silent and attentive hearing you have accorded me during the reading of this my presidential address.

SWINE FEVER.

Instructions to Veterinary Surgeons specially employed by the Board of Agriculture.

On receipt of instructions from the Board of Agriculture to inquire into a suspected outbreak of swine fever, the veterinary surgeon will be so good as to carry out the inquiry in the following manner:—

1. On arrival at the premises where the disease is reported to exist, the veterinary surgeon is to make general inquiry into the condition of all the pigs upon the premises, including their past history, and, in the event of his finding that any of them have died, he is to make a careful examination of the carcase throughout the whole of the intestinal and respiratory track, with a view to discover the cause of death, and the nature of the lesions present.

2. It is quite possible that the veterinary surgeon may not find any of the typical lesions of swine fever in the first carcase he examines, and if no other pig has died he is to extend his inquiry to an examination of all the pigs on the premises. If after careful clinical observation he detects symptoms among them which lead him to suspect that swine fever is present, he is to arrange with the owner as to the

value of all the diseased or suspected animals, and he is authorised to slaughter one or more of them, if necessary, and continue to make *post-mortem* examinations until he is satisfied that swine fever does, or does not, exist.

3. When conducting his inquiries into the condition and general health of the swine on the premises, the veterinary surgeon should carefully examine any pigs which present an unthrifty condition, as experience now shows that there are many cases in which swine fever assumes a chronic form, the clinical symptoms which have generally been regarded as associated with swine fever being entirely absent. Pigs affected with this form of swine fever gradually fall off in condition, and present an unthrifty appearance. They should be slaughtered, and on *post-mortem* examination, extensive diphtheritic or ulcerative lesions will commonly be found. All swine in this condition should be regarded as decidedly suspicious.

4. So soon as the veterinary surgeon has established the fact that swine fever exists, he is at once to slaughter all the other apparently diseased pigs on the premises, and arrange for the destruction of the carcases or their burial in some fit and suitable place at a sufficient depth and covered with lime.

5. In cases where in the opinion of the veterinary surgeon swine fever exists, he is to forward with the least possible delay, addressed to the Chief Veterinary Officer of the Board of Agriculture, 4, Whitehall Place, London, S.W., portions of the viscera in which the typical lesions are present. These parts are to be cleansed and, after being allowed to drain, wrapped in a cloth previously moistened with some disinfectant, and enclosed in the waterproof bag sent to him for the purpose.

6. When forwarding to London the portions of viscera selected, the top of the bag in which they are placed is to be turned down and then firmly secured with string in such a manner as to prevent the escape of any liquid which may happen to have remained in the intestines.

7. The two address labels are to be filled in, one being tied to the bag and the other firmly attached to the box in which the bag is to be packed.

8. The box is to be forwarded at once by passenger train.

9. The Veterinary Surgeon's Valuation Form (S.F. 3.) is to be fully and carefully filled in, and forwarded to the Board *by earliest post*.

10. The valuation is to represent the fair market value of the pigs immediately before they became diseased, and the

owner is to be informed that, should the pig slaughtered be affected with swine fever, the Board have no power under section 16 of the Diseases of Animals Act, 1894, to pay more than half the valuation.

11. The veterinary surgeon will be held responsible for the making of the valuation on the basis of the fair market value and no more, and it is to be borne in mind that compensation is paid, not for the purpose of relieving pig owners from their losses consequent on the outbreak of disease on their premises, but in order that the disease may be exterminated. Under no circumstances is the valuation to exceed £8, and this sum can be approached only on rare occasions and under very exceptional circumstances.

12. The enclosed copy of the rules applicable to a swine fever infected place is to be handed by the veterinary surgeon to the occupier of the premises, who is to be cautioned that any neglect on his part to give effect to these rules may not only tend to spread disease in the neighbourhood, but may also render him liable to heavy penalties.

13. The veterinary surgeon, while in no way interfering with the owner's right to slaughter pigs on the premises and to remove the carcases subject to the conditions set out in the Rules, is to take the necessary steps to prevent the removal while alive of all pigs which from any cause may be regarded as having been in contact with or exposed to the infection of swine fever, and the veterinary surgeon is to see that all proper precautions are taken to prevent the spread of the disease.

14. It is most important that veterinary surgeons, butchers and other persons engaged about pigs affected with swine fever, should be very careful in carrying out the thorough disinfection of the instruments used in slaughtering and making *post-mortem* examinations. They should also, before leaving the premises, thoroughly disinfect their boots and wash their hands with soap and water. It is desirable that when engaged in this examination the veterinary surgeon should wear waterproof overall clothing, which can be removed before leaving the premises.

Board of Agriculture, P. H. Elliott,
February, 1896. Secretary.

Horse owners in buying foreign grain may be well advised to have inserted on invoices of any grain they may buy, that such grain is free from "Indian Peas," which have been used as an adulterant with such disastrous effect.

GOVERNMENT GRANTS TO VETERINARY COLLEGES.

THE matter of the Government contribution to veterinary colleges in England and Scotland, it is understood, was brought before the Lord Provost Committee of Edinburgh Town Council at a meeting recently, and in view of the fact that a contribution was likely to be received from the Government by the veterinary colleges in Ireland, the committee were of opinion that steps should be taken to have these colleges in England and Scotland put on the same footing as the Irish colleges.

Editorial.

BOARD OF AGRICULTURE.

Annual Reports of Proceedings under the Contagious Diseases (Animals) Acts, Markets and Fairs (Weighing of Cattle) Acts, etc., for the year 1894. *Presented to both Houses of Parliament by command of Her Majesty.*

WHEN I first saw this report I was much surprised that the word veterinary was absent from the outside cover and from the title page, and I wondered if this were the beginning of the end of the Veterinary Department of the Board! This wonder was certainly accentuated when I read the conclusion of Major Tennant, "Principal of the Animals' Department," who says, "It must of course (why, of course?) be a matter for the consideration of pig-owners generally whether in their opinion the possible extinction of the disease (swine fever), is worth so severe a trial of their endurance as must be necessarily entailed by such restrictions, but having regard to the experience gained in the past 14 years, during which local authorities, *although endowed with ample powers*, failed to make any progress towards its final extirpation, it seems hopeless to expect any final success unless swine owners are prepared to submit for a time to interference with their trade, and unless local authorities afford the Board their hearty co-operation and assistance." This statement seems to me to be a confession that the proceedings for the suppression of swine fever as carried on at present have proved, what is really the case, a dead failure, but besides the confession of failure it contains two statements which are not in accordance with facts. 1st. "Unless swine owners are prepared to submit for a short time to interference with their trade." Now, so far as

my knowledge goes, swine owners are only too anxious and willing to submit to interference with their trade, if they thought that the measures of the Board would ultimately do any good. What they object to are the present measures, and certainly these are most objectionable. For example, a report is sent to the Board that swine fever is suspected at a certain place; in the course of time a wire is sent to some veterinary surgeon, not necessarily the nearest one, and who knows the district, to hold himself in readiness, on receipt of instructions and a waterproof bag, to examine the pigs and premises mentioned, to slaughter a pig, and send his opinion and the viscera to London. As a rule, he hears no more about the matter; but very often, perhaps in a few days or a week, or more, he is ordered to examine the pigs, etc., a second time, the Board being, seemingly, not satisfied with the opinion already sent.

During this period the premises are under police supervision, the owner is not allowed to sell, nor otherwise dispose of, any of his pigs, nor is he allowed to bury his dead ones. The veterinary surgeon, on his second visit, frequently finds that several pigs have died and are lying, unburied, about the premises, eaten by rats, who thus become the carriers of the contagion to other premises in the neighbourhood; and the pity of it, the pig owner, generally a very poor man, receives no compensation for the dead ones. A report is sent again to London, when probably the Travelling Inspector appears on the scene, and immediately proceeds to value and slaughter the, perhaps, few remaining pigs. I have heard it stated that the burial is often a very superficial affair, and that an explosion has occurred, the superimposed earth being scattered about in every direction.

I have had considerable experience as an Inspector, and can safely say that, under the local authorities, the duties were performed in a much more efficient and satisfactory manner, the veterinary inspector having full powers given to him. After having intimated the disease to their clerk and to the Board, the remainder of the herd were at once slaughtered, the owner receiving a fair valuation; all healthy pigs, considered by the inspector as being fit for food, disposed of for that purpose, and those not considered fit properly buried and covered with lime. Of course, there was one objection to the local authorities having powers, namely, that those powers were non-compulsory, and, consequently, were not uniformly carried out, being totally neglected by some, whilst strictly observed by other, local authorities.

The second misleading statement is as follows:—"And unless local authorities afford the Board their hearty co-operation and assistance." I see no difficulty in obtaining this co-operation and assistance from local authorities; indeed, I learn that deputations have waited upon Mr. Long, to press upon him the necessity of receiving this co-operation and assistance. Offers and suggestions of these deputations were coldly entertained by the minister, and the members of the deputations were told as much as to go home and mind their own business; that the Board could on no account act upon their suggestions. And what were these suggestions? Simply that the inspection, slaughter, etc., should be carried out as formerly by those on the spot, and that the compensation should be paid, as at present, out of the Imperial Exchequer, and not out of local rates, as had been the case before the whole management was taken over by the Board in London. These suggestions were considered to be reasonable both from the economic and the efficient points of view. The other points of the Report of the Principal deal with importation, markets and fairs (weighing of cattle), etc. The police officers who have assisted the officers of the Board, are complimented for their efficiency, etc. Then the Principal deals with the duties of the Board in connection with the contagious and infectious diseases, hazards some opinions upon the insidiousness, virulence, etc., of contagious diseases, matters which are purely professional and scientific, and which ought to have been dealt with by a professional and not an amateur. With reference to sending the viscera to London, to which so much objection has been raised, individually, I see no objection, so long as the Board pay the compensation; indeed, it would be unreasonable to ask for compensation if the Board had no say in the matter.

So much, then, for the Principal's Report, which ought to be carefully studied by every member of the profession, for I feel sure that they will feel convinced that they, and the profession they belong to, are "very small potatoes" indeed.

The first 52 pages contain the report of the Chief Veterinary Officer and here there is evidence of laborious work and careful study. It mostly and necessarily deals with swine fever, which the whole of the year has occupied a very large part of the time of the veterinary officers in the examination of the viscera of pigs slaughtered under the provisions of the Swine Fever Act of 1893, "and it is necessary to explain that no pigs are slaughtered as having been exposed

to infection until these officers have repeated the nature of the disease with which the first or test animal was affected," etc. Then some observations are made as to what the Swine Fever Act has done in promoting knowledge amongst veterinarians and the Officers of the Board of pig diseases generally, and we have a list of the causes of the illness and death of pigs examined by the Board, and amongst them are included "choking with potatoes, choked by administration of medicine, overlain by mother, injured and ribs broken, indigestion by improper feeding, inflammation of stomach and intestines, inflammation of liver, cirrhosis of liver," etc., etc. It may here be stated that veterinarians, particularly country practitioners, were not quite so unconscious of such diseases and accidents even before the Act of 1893, but let it pass. It is again pointed out that swine fever is more prevalent during the summer months than in the spring, and that it gradually decreased towards autumn and winter. This statement, which has been noted for years past, has been attributed to the circumstance that there is always a greater trade and movement in pigs in the warm than in the cold seasons of the year, pigs being more in demand by dairy farmers and others in summer than any other period. This conclusion can only apply to the general and not to local circumstances as it is within the experience of many that the converse is the case. Then the differences between the manifestation of the swine fever and pleuro-pneumonia in cattle are pointed out very clearly.

Reference is made to statements by professional witnesses examined by the Departmental Committee of 1893, who referred to the existence of disease in the lungs of pigs affected with swine fever; "but constant observation and subsequent inquiries into cases where lung lesions alone have been detected have led to the conclusion that the only lesions to be relied upon as indicative of swine fever are those which are to be found in the intestinal track, lesions in the lungs in cases of swine fever being by no means constant."

Unfortunately, no reference is made to the observations and conclusions of Continental and American writers, that there is more than one form of disease which goes under the name of swine fever, namely—

(1) *Swine plague*, a specific septicæmia produced by a small bacillus, inducing gastro-enteritis, hæmorrhagic nephritis, enlargement of the spleen, and inflammation of the heart, liver, and voluntary muscles.

(2) Contagious or infectious pneumonia, which is produced by an ovoid bacterium inducing pulmonary changes of a necrotic and caseous nature, and

(3) Hog cholera (the swine fever of the Report), due to an oval, mottled, ærobic and anærobic bacterium, characterised by ulceration and diphtheritic exudation in the intestinal track.

Is it not possible that we have at least two of the above diseases amongst the pigs of this country? And whilst pondering upon this question one can only regret that microscopical and other methods of research have not been brought to bear upon the question.

The plates are very beautifully executed, and one fact, hitherto but little known, has been brought to light, namely, the occurrence of necrotic spots on the mucous membrane of the stomach.

Whilst dealing with the lung disease of cattle landed from Canada and the United States, Mr. Cope still maintains that the disease is contagious pleuro; and I do not wonder at this, because the problem was solved without the aid of scientific men by a late President of the Board of Agriculture, who stated that it must be pleuro-pneumonia because he had seen the lungs. Who can go against this? Mr. Cope very carefully gives the *post-mortem* appearances, and on reading it one must confess that they are similar to those of pleuro. Unfortunately, however, nothing is said about the microscopic appearances of the lesions. That there is pleurisy associated with this American broncho-pneumonia, and a marbled appearance, I am bound to admit, but a careful comparison of the two diseases will at once strike the unbiased eye that they are two different conditions. In sections of the Canadian disease there are yellow points which, when pressed upon, discharge a yellow, more or less purulent, catarrhal product from the bronchii, whilst in pleuro these catarrhal products are absent; but both blood vessels, bronchii and air cells will be found blocked up with fibrinous coagula —a condition not seen in the American disease. I have, therefore, to maintain that the exclusion of Canadian cattle from this country for feeding purposes is founded on wrong grounds. It is very evident that the Chief Veterinary Officer is not very strong in his opinion, as further on he states, in answer to the Canadian authorities who deny the existence of pleuro in the Dominion, and call the disease "Transit Pneumonia," "whatever name may be given to this disease it is certain that it possessed all the characteristic appearances

of contagious pleuro-pneumonia." The fresh specimens were submitted to several experts in the veterinary profession, who stated that the lesions and appearances were such as had always been regarded as indicative of contagious pleuro when found in the lungs of cattle in this country. Mr. Cope does not mention that these lungs were submitted to other experts who denied the identity of the disease with pleuro.

"Like that disease" (pleuro), Mr. Cope says, "it is clearly specific and of a low infective power, otherwise further cases would have been found in some of the cattle when the cargo was slaughtered. This report of Mr. Cope's deals with two cargoes, one of 400 cattle, per s.s. Toronto from Montreal to Birkenhead, 20th May, and that of 510 by s.s. Laurentian also from Montreal to Birkenhead, 23rd May, 1893, and some further cases in June found at Deptford and Glasgow, but the number is not stated. Mr. Cope repeats the statement made by Professor Brown that this disease, like pleuro-pneumonia, is of low infective power. Now as to the infectiveness of pleuro, I gathered for the first time when I read Professor Brown's opinion that it was of low infective power, but even granting that its infection was low, is it in accordance with reason and experience that only one carcase in each of these two cargoes of 400 and 510 respectively should be found presenting signs of disease.

Then as to the infectiousness of this disease. How does Mr. Cope or Professor Brown know that it is infection at all? Surely the finding of one or two diseased lungs in such a large number of cattle is no proof of infection. If the Board were anxious to put this supposed infectiousness to the test and put an end to all doubt, they would have agreed to proposals to that effect offered to them by a Scottish agriculturist.

When the disease was discovered in France, the Government of that country had it thoroughly investigated by Nocard, and he came to the same conclusion as myself that the disease was an ordinary catarrhal or broncho-pneumonia, very often associated, as in the human being, with pleurisy. I may state that the same pathological condition of the lungs will be found in pneumonias, acute and chronic, arising from chills, chronic blood poisoning from drinking contaminated waters, and in post-parturient pneumonias arising from retention of fætal membranes or any other cause of sepsis or septicæmia.

Notwithstanding these differences of opinion existing between the Chief Veterinary Officer and myself, I heartily

recommend his Report to the careful perusal of every member of the profession, who will, I am sure, not only admire the ability of Mr. Cope, but sympathise with him, and with the profession which he represents—with him as one placed not at the head of the department, and with the profession as one which is being snuffed out to make way for amateurs.

The report upon Inoculation for Anthrax is well worthy of consideration. It appears that those who have experimented in this country have arrived at different conclusions to our Continental brethren. Can it be that British experimentalists are a lot of blunderers?

A FEEBLE DEFENCE.

I AM sorry to have to avail myself of editorial privilege in order to acquaint the readers of this journal with the defence which Mr. Dollar has thought good to make in regard to the complaint brought by me against the Examination Committee in the January number of the VETERINARY JOURNAL.

The young gentleman's defence is so feeble that I at first thought I might leave the whole matter to the good feeling of my colleagues in the profession, but I found it impossible to pass over the grave personal charges which he makes against myself. I thought it undesirable to allow such flippancy to pass without protest, and I felt bound to guard my friends against Mr. Dollar's sophistries and errors. This must be my excuse for bringing the dispute once more before my readers. It is very annoying to find Mr. Dollar trying to change the *venue* of the dispute, and running away to the editor of the *Record* with his complaints. Had he been imbued with a truly courteous, not to say manly, feeling, he would have written to me direct, and not have tried to injure me with his poisoned arrows from beneath the secure shelter of a brother editor's shield. When I undertook the editorship of this JOURNAL in January of last year, I invited all who had anything to say, provided it was important and not scurrilous, to contribute to my pages; I do so still, and I should welcome even an attack—of course, a fair and manly attack—from any opponent. But to try to transfer the matter to another journal by sending in his own version to the *Record*—certainly a well-conducted and widely-read journal—knowing that I could not well follow him thither, seems to me discourteous and unbecoming. Perhaps this did not occur to Mr. Dollar, and perhaps one

ought not to be too hard on a young man whose experience is not yet equal to his confidence, but it might be well for him to be more careful in future.

The position which I took up has been completely vindicated by the closely-reasoned and altogether admirable letter of Mr. W. F. Barrett, which appeared in the *Record* of 15th February, and which I append hereto as the antidote to Mr. Dollar's poisonous doctrine. In this letter Mr. Barrett sweeps away all Mr. Dollar's sophistries and dispels them for ever.

Mr. Dollar so far forgets his good manners as to accuse me of deliberate misreading. He attempts to distinguish between "whether they had been all obtained at one time or not," and "it does not matter to the Council how or when they were obtained"; with the exception of the word "how," there is no difference that I can see, and really this difference is only verbal; it is accidental, and would have no effect whatever on the validity of a set of certificates, let us say, of the Scottish Education Department. A lad passes two subjects, let us suppose, at Aberdeen; he comes to Edinburgh to finish his school training, and, in an Edinburgh school, he passes other two subjects; are his certificates invalid for that reason? Certainly not, according to the General Medical Council and our bye-law No. 52, which is the same thing and by which, as Mr. Barrett says, Mr. Dollar and all other authorities are bound. The rest of Mr. Dollar's remarks under this heading are mere rhetorical flourish—he must pardon me if I say bombast; he has the unfortunate faculty of setting up men of straw, and then riding full tilt at them by way of showing his prowess and dexterity; it is, doubtless, very amusing and very exhilarating to him, but it is somewhat saddening to the spectator.

Mr. Dollar next attempts to fasten on me a charge of betrayal of confidence, saying that I used information obtained in committee! This appears on the face of it rather serious, but if I reply to Mr. Dollar's accusation that I was not a member of the committee—then I fear I have pricked the bubble and spoilt the solemnity of his tragic utterance. It is rather a shame to do so, I confess: the italics had rather a melodramatic effect; still, one must be honest. The information I used was the common property of the Council and I was quite justified in using it—nay, bound to use it in self-defence.

Mr. Dollar concludes his letter with a venomous, almost savage, attack upon my character as a private citizen. This,

I am thankful to say, I can treat with tranquil disdain. I have stood prominently forward in the public view for nearly 40 years as a surgeon, a teacher, a writer and—yes, it is true, I have actually taken my share of political burdens, but I did not know, till Mr. Dollar told me, that that was a crime.

The following letter, addressed to the editor of the *Veterinary Record*, is the one to which I have referred above:—

SIR,—My neglecting to read your esteemed contemporary, THE VETERINARY JOURNAL, has hitherto prevented me from suitably acknowledging the too flattering prominence given to my name in its editorial pages for January.

Professor Williams has a grievance, occasioned apparently by the refusal of the Examination Committee to accept divided or incomplete matriculation certificates despite the fact (as defined by Professor Williams) of their having intimated "such certificates would be accepted as evidence of fitness whether they had all been obtained at one time or not." Paraphrases are dangerous, however, and that this particular paraphrase is a deliberate misreading is shown by Professor Williams' later quotation, "It does not matter to the Council *how* or *when* they were obtained"—an entirely different matter.

Until a candidate enters a teaching school, the Council of the R.C.V.S. has no power whatever over him; it cannot therefore say either *how* or *when* he shall attain his certificate; but it can and does control its own examinations, and it does say that, unless the certificate tendered shows all the subjects were passed at one time, it will not admit the holder to his first professional examination. Surely this was very clear, and if not, should here become so by pushing the argument a little further. The subjects must either be passed at one time, or they must not. No one has suggested they should be passed at twice, or thrice, or ten times; hence, if they are not to be passed at once there is absolutely nothing to prevent a student offering fifty certificates and taking twenty years to matriculate. To bolster up this view, we have even been gravely told that the man who passes subject by subject is as good as one who passes all at once. The suggestion scarcely requires refutation. If the student remembers his first subject when he comes up to pass in his second, why should he not pass in both (or all) together? The answer is, that the class of student now in dispute cannot—he has forgotten his first. But he should be passed, say Professor Williams' disciples, because he once knew them. We are in short to accept him not for what he knows, *but for what he has forgotten!*

The Examining Committee refused to be converted to this startling doctrine—hence the injustice. It must be a very grave injustice, for though he introduces it with "some hesitation," and a feeling that "the matter may seem to be to a certain extent a personal one," Professor Williams sees in it what "may go on in process of time to become a national disaster."

For some time past those of us who resist the efforts to degrade the examination have been the subjects of all the well-known methods of depreciation so dear to the heart of the less refined sort of controversialist, but it has been reserved for Professor Williams to specially distinguish himself in this industry, and, by the use of information obtained *in Committee*—information which all laws of honour regard as confidential—to establish a new, if somewhat unenviable record.

"It appears that the motion was made in Committee by Mr. McFadyean, and seconded by Mr. J. A. W. Dollar, but as Mr. Dollar was not a member of

the Committee, his seconding was pronounced incompetent by the Chairman. Are we to suppose that this was a mere mistake on the part of Mr. Dollar, due to his youth and inexperience?"

The Committee did not resent my mistake and, indeed, invited from me an expression of opinion. It is, then, scarcely necessary to reply to such accounts of my enormities, except to indicate the spirit in which they are advanced. Mistakes are unavoidable, and if I am indeed so young and inexperienced, the accusation carries its own excuse, while I may at least hope to prove one of those whose follies cease with their youth, and not of those who prefer dark ways to light in spite of age and experience. Whether youth may fairly be imputed to anyone as a reproach I must leave to others to determine, but my accuser, who has passed a long life in politics, can neither claim it as explaining his employment of confidential information, nor his forgetfulness of the dignity of an editorial position.

JNO. A. W. DOLLAR.

THE COUNCIL AND THE EDUCATIONAL EXAMINATION.

BY W. F. BARRETT, F.R.C.V.S.

I DESIRE to offer a few remarks on the letter of Mr. Dollar which appears in your issue of the 8th inst., and further to explain why the Council has fallen into such confusion over the education question.

In respect to Mr. Dollar's communication, I think it will be generally regretted that it is of such a personal character, because Professor Williams and he will meet again on this subject at the same table, and it will be difficult for them to debate the question in the calm manner which, in the interest not only of the profession but of the student, it is desirable to do.

I think it only fair to Mr. Dollar to say that he was invited, like myself, to offer an opinion on the subject, and he no doubt quite inadvertently seconded Professor MacFadyean's proposition.

Mr. Dollar loses sight of the fact that, whatever he or others may desire, the Council and students are bound by Bye-law 52, which in effect places the Veterinary in the same position as the Medical Student, in respect to the resolutions of the General Medical Council. By these resolutions he is bound, and it is manifestly incorrect to say that by the recent decision of the Council the standard of examination has been lowered, or that the examinations of our students differ in any respects from those of the sister profession. One is almost tired of pointing out that the question as to whether the student who passes his examination in parts is better or worse than he who passes in all subjects at one and the same time is altogether another matter, inasmuch as the bye-law must be adhered to, though the entire Council be opposed to it.

If certain gentlemen object to the bye-law, let the Council

discuss and, if desirable, alter it; instead of this, however, there is a manifest desire to twist the bye-law to meet the wishes of a minority of the Council. If I am not asking for too much space, I will endeavour to explain the resolutions of the General Medical Council, for the profession would be sorry to learn that these were being swerved from either in respect of leniency or undue stringency.

The resolutions are divided into two parts which I shall denominate A and B.

Regulations A provide for the registration of students who possess approved certificates [as, for example, those of the Scottish Education Department, mentioned above.—ED.]

Regulations B enable a student to be registered who has passed what is termed the preliminary examination in general education, and it will be observed that the two modes of registration are entirely distinct. The confusion of certain members of Council has arisen from a non-observance of this simple fact.

In regard to the resolutions under the first head—viz., the possession by the student of approved certificate—the examining bodies who grant these certificates are divided into four divisions. Practically, the first schedule to Bye-law 52 in our register comprises examining bodies in Division I., and therefore it will be sufficient to treat of this, remembering that II. and III. are precisely similar as regards the passing of the examination.

The regulations, before enumerating the approved bodies, say:—"The examinations in Divisions I., II., III. at present entitle to registration on production of satisfactory evidence that the applicant has passed them." These words, which I have fully and correctly quoted, were no doubt inserted for the very purpose of explaining that in these divisions the mere production of the certificate was sufficient. This is most palpably evident for two reasons—one in Division I.: the University of Wales is cited, and the General Medical Council, not feeling assured of the standard of this examination, expressly state "the whole of the examination to be passed at the same time, and to include one of the optional subjects required by the Council." In Divisions I., II., III., there are given no less than 51 examinations, the certificates of which will be accepted, and in only one instance—viz, University of Wales—are there any directions as to how or when the examination shall be passed. Can any intelligent man fail to mark the signification of that special direction?

The second reason I shall give is even still clearer, if that is

possible. Division IV. comprises certificates of Indian, Colonial, and Foreign Universities and Colleges. The General Medical Council in dealing with this division, have appended this direction, "No certificate from the bodies in the foregoing Section IV. will be accepted after October 1st, 1895, unless it states that all the subjects of examination have been passed in at one time." What is the effect of these directions? Why, clearly this—the General Medical Council says, in Division IV., the mere production of the certificate is not sufficient; the standard of this examination is somewhat low, and in consequence we shall compel you to furnish evidence, not only of your having passed, but that you have passed at one and the same time.

Now, as to resolutions under what I have termed B.

These resolutions relate entirely to the "Preliminary Examination in general education required to be passed previous to the commencement of medical study." Of course, students possessing any of the foregoing certificates will not need to pass this examination. I need not enumerate the subjects of this examination; they are too well known. The General Medical Council, in order to make this quite plain, has appended the following directions:—"The Council will not in future accept any certificate of pass in preliminary examination in general education unless the whole of the subjects included in the preliminary examination required by the Council for registration of Students of Medicine have been passed at the same time."

A mistake has been made by some members of the Council as to the precise meaning of this direction, and, incredible as it may seem, they have confused the meaning of the words "preliminary examination" by extending them to all the examining bodies in the four divisions. The General Medical Council, as if to make this point doubly clear, says, under Resolutions B, "The preliminary examination in General Education shall be as follows," thus strictly limiting the use of the words to the special examination of the Council, and in no other way are these words used.

To summarise, the directions are as follows: "Students who possess any certificates in Divisions I., II., III. (excepting University of Wales) are entitled to registration without inquiry; those possessing any certificate in Division IV. must show that they passed all the subjects at the same time; and, lastly, a student who possesses none of these certificates must pass the preliminary examination at one and the same time." . . . .

In conclusion, I have but to say that if Professor McFadyean's ideas be decided upon, you will place the examination of the Veterinary student far beyond that of the Medical. Do you desire this? I think not, and I shall accordingly do my best to keep the education where it is, and where the profession generally desire that it may remain.

Proceedings of Veterinary Medical Societies, etc.

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

THE ANNUAL MEETING of the Scottish Metropolitan Veterinary Medical Society was held on Wednesday afternoon, 26th February, in the Clarendon Hotel, Princes Street, Edinburgh. Mr. John Cameron, Berwick-on-Tweed, President of the Society, occupied the chair, and among those present were Principal Williams, Prof. W. O. Williams, Prof. O. C. Bradley, Prof. McCall, junr., Glasgow; Dr. Ivison Macadam, Edinburgh, Capt. Appleton, Inniskilling Dragoons; Messrs. R. Rutherford, Edinburgh; A. Spreull, Dundee; W. Anderson, Glasgow; Gordon Frew, Glasgow; Colin C. Baird, Edinburgh; J. McLauchlan Young, Dundee; T. W. Inglis, Forfar; J. Connochie, Ayton; W. Hepburn, Coldstream; Peter Moir, Edinburgh, Hon. Secretary; W. Lothian, Duns; J. Aitken, jun., Dalkeith; J. Storie, East Linton; D. Young, editor of the *North British Agriculturist;* and Messrs. Ferguson, Locke, and Williams, visitors.

Apologies for absence were intimated from Mr. Andrew Hutchison, Beechwood, Perth; Mr. Harry Thompson, Aspatria; Mr. James Clark, Abbeyhill, Coupar Angus; Mr. A. Seton Milne, East Linton; Mr. James Thomson, Aberdeen, President of North of Scotland Society; Mr. Charles Cunningham, Slateford; and Mr. Robert McNae, Maxwelltown, Dumfries.

Mr. R. RUTHERFORD, Edinburgh, nominated the following gentlemen:—Mr. Braes, Linlithgow; Mr. Donaldson, Dollar and Mr. Lothian, Duns.

The Council of the R.C.V.S.

Mr. R. RUTHERFORD, Edinburgh, called attention to a matter which he said should be taken up by their Society. It was high time that Scotland was represented on the Council of the Royal College of Veterinary Surgeons, quite irrespective of those who had a seat through their position in the schools. Scotland was not wanting in many capable men who could worthily hold this honourable post and it was not fair that the honours should be entirely relegated to gentlemen on the other side of the border. He thought a small committee might very well be appointed to select two or three gentlemen who would be willing to act as a member of Council. There was no time to lose, for the nominations would be made very shortly, and the elections would take place early in June. It was really time that they had someone on the Council from their side of the Tweed.

Principal WILLIAMS said he had thought this matter over, and it was his opinion that they should select a candidate for the Council that day. He cautioned the members, however, that if whoever they appointed did not attend the meetings in London, they might as well not be elected at all. It was not every man in Scotland who would go to this Board. They could not afford either the time or the money.

Mr. RUTHERFORD said he was prepared to nominate three gentlemen, although he did not know whether they would accept. Any one of the three could fairly represent them in the Council.

Mr. MOIR said Mr. Rutherford's motion was well worth seconding. The time was so short that steps should be taken immediately to approach someone on the subject.

Mr. RUTHERFORD said they must bear in mind that since the restoration of members' rights under the ninth clause, there was no bar to members acting on the Council. He nominated Mr. Cunningham, Slateford, as representing the southern part of the country; Mr. Robb, Glasgow, as representing the west; and Mr. Thomson, Aberdeen, as representing the north. Either of these gentlemen would make an exceedingly worthy representative of Scotland at the present time.

Mr. MOIR suggested that they should add to that number two well-known men in the profession, Mr. Spreull, Dundee, and Mr. Hutton, Kelso.

Mr. RUTHERFORD pointed out that what they wanted were men of some individuality on the Council, men who would not simply go and sit and do as they were told, but men who would do as they thought. With regard to the five gentlemen who had been nominated, he supposed that if the whole of them agreed to act they would simply require to ballot.

Principal WILLIAMS suggested that the Secretary should write to these gentlemen, and if they got one out of the lot to act he would do very well.

Professor W. OWEN WILLIAMS suggested that the easiest way out of the difficulty was to ballot for the five names in the meantime, and whoever had the largest number of votes should be asked to represent them. If he declined, the gentleman with the next highest number of votes should be approached.

This met with the approval of the meeting, and on a ballot being taken it was found that Mr. Cunningham, Slateford, had the highest number of votes, Mr. Hutton, Kelso, being second.

The President's Address.

The PRESIDENT then delivered his address, which was as follows:—

Gentlemen, my conscience has grave doubts whether I am not guilty of monopolising this honourable position by assenting to occupy it another year. I fear my defects may detract from the success of our Association. However, I feel very highly the honour you have again conferred on me, and will do my best to be useful in maintaining the honour and usefulness of our Association. Another year has sped its rapid flight during which "old time has dealt very leniently with our membership as well as with the prominent members of our profession."

At this time last year we all felt that our profession had sustained a great loss by the death of Professor Walley. Recently, as you will be aware, it has been decided to do something "in memoriam," and the necessary means are now being solicited and collected. Some persons have good talents, but they do not cultivate them, and have never any to spare or give away. Others cultivate them, but they are so selfish, they never have any to spare except at a great price. Professor Walley was the very opposite of both these classes. In the pursuit of knowledge, he was assiduous to gain that he might bountifully distribute. He lived and died for the profession, and I hope—I feel sure—that everyone will contribute cheerfully, according to his ability, towards the proposed Memorial. On such occasions as the present, and had I been a member of the Council, it would have been quite natural that I should have gone into professional politics, and given explanations and opinions on controversial points. But I think I should leave that to some member who is personally, or, at least, more minutely acquainted with particulars than I am. Further, I think it is not only the duty of our representatives to explain and obtain our ideas on such subjects, but it is equally our duty to attend and hear such deliverances, and to take a lively interest therein, and assist our

legislators in shaping a policy which will always be honourable and beneficial to all. There are, however, one or two points which I think we would all agree upon. I have often mentioned the ridiculously short time allowed us to consider whom we should vote for as councillors compared with the long time allowed to the Secretary to count the voting papers. The candidates are often complete strangers to us, both in person and in ideas, and we have no time allowed us to write and enquire of any one. Why do we not take means to remedy this evil? As an association I think we should have one or more members appointed as guides to whom we might refer; or, who with the Secretary, might inform us regarding the candidates for office.

I observe with pleasure a movement which I hope will develop for the better recognition and equitable treatment of our profession by the Government. I shall be very pleased if someone will move that our Secretary be asked to draw up a petition in favour of the same from this Association to the Government, and have it forwarded. I am sure no one can question the special claims of Scotland, or of Edinburgh in particular, to a proportionate amount of any grant which may be made from any national source in furtherance of veterinary science. Nether can anyone question the need for further research into various animal diseases—researches which so far, at least, must be conducted locally, and which require more time and money than the ordinary practitioner can either spare or afford to give.

Tuberculosis.

Regarding the subject which has most prominently engaged our attention during the past year, viz., tuberculosis, I think our efforts have been as successful as could have been expected. Although I was rather disappointed to see some others take such a selfish, mercenary view of this great cause, I hope every one of us will consider the subject as being still before us and in an urgent condition, requiring the constant application of both head and hands. Some years ago we were expected to fall in and believe that foot-and-mouth disease had become indigenous. Now we are expected to believe that there is no real heredity in tuberculosis, and only one case of its fœtal development; that milk from the affected cow is the cause. The public know better than to believe all that. Where is the intelligent person who cannot recall to memory parents who were, one or other of them, of tuberculous generation? Never very robust, yet never acutely affected, they have lived to a fair age. In other cases the parents have always been, and yet are, as vigorous persons as you could desire, and their family grew up the same until of age and upwards. In a few years how many of the family have rapidly succumbed to tuberculosis? Has the public not known for many, many years that it sometimes passes latent in one generation and breaks forth very acutely in another? We have isolated the germ of tuberculosis and transplanted it, etc., but where is the veterinary surgeon or professor who can tell us its whole natural history, pathology, and peculiarities? There is, however, one aspect of the subject about which there is no doubt, viz., the badly diseased condition of many cows which supply the public with milk. Again, I repeat it is our duty to make public *post-mortems* and show the public the sources of their milk supply and the inspection farce which prevails in many places. I am very pleased at the energetic way in which Edinburgh has treated her milk supply for some time. I beseech every one to lend a helping hand. There is yet much to elucidate and learn of this subject, and if the present generation do not reward us, we will not be treated any worse than many others who have only been acknowledged by succeeding generations.

The Government and the Profession.

The treatment which our profession continues to receive at the hands of

the Government and of many local authorities is, to put it mildly, very mean and disrespectful. I think we will only be doing our duty if we combine, to a greater extent than we have ever done before, in claiming a fair share of recognition and reward from the managing departments of the nation. In the past we have allowed the gentleman amateur, the sanitary inspector, the chief constable and even the serjeant of police to elbow us out of our legitimate sphere of influence and employment. Also, although we have no hand in the constant changes which taken place in our Contagious Diseases Animals Acts and Orders, both Imperial and local, the public do not know it. And our value is very much lowered in their estimation. And no wonder our old subject "Canadian pleuro" has been resting. The noisy minority has been damped down and with the assistance of the new Minister of Agriculture they are soon to be extinguished. The fickle majority thought they would be all right when they got the Malt Tax abolished; now it is Canadian pleuro and stop the importation of cheap store animals. What will it be next? After reading Mr. Long's remarks when introducing his Diseases of Animals Bill I felt it would be impossible for anyone to say, what next? Such a bundle of absurdities I have rarely seen. I hope you have all read them. However, he certainly finishes up very accommodatingly. "It was therefore undesirable to continue the present state of uncertainty in the minds of those who believed themselves to be prejudicially affected." After that, if he knows anything about logic or consistency, we should be able to get an investigation into the nature and reality of Canadian pleuro. The Canadians only require to repeat his own words. In pleuro-pneumonia the veterinary profession is entirely ignored. The importation of pleuro-affected animals from abroad has been the great cause. The killing of all imported animals has been the cure. (How many infections took place from Canadian pleuro?) Perhaps Mr. Long may also be able to explain and reconcile, why it is that store cattle of all ages continue so scarce and dear, seeing that they have had protection for some years, and he could not imagine any Minister of Agriculture proposing to remove these (protective) restrictions." Cattle during these years were never before so free from contagious diseases. Compare that with the supply of home-bred swine. in which, during these said years disease has been rampant, and until quite recently on the increase; yet, notwithstanding, pigs and pork, home-bred and fed, were never so plentiful and cheap as at present. It is only a short time since another important authority told us that the regulations did not affect the increase or decrease of breeding; it was simply a question of supply and demand. Is cattle an exception to that rule? Do they really require protection? Is it too much to ask them to trust in the regulations, which are said to have worked splendid results? The answer is—They are afraid to trust; fear, without a reasonable basis—a grand foundation on which to pass Acts of Parliament. He also says, certainly the price of meat had not gone up since the restrictions, &c. Was such a thing ever expected? If you cause irregularities and gluts in the supply, can you expect prices to rise or even show a good average? Surely not. The middle men know how to manage these circumstances. The "fickle majority" of landlords, agents, and gentlemen farmers may vote for anything but coming in contact with the *bonâ fide* arable land cattle-feeding farmers. I say, take a poll of the said farmers at any auction mart or store cattle market from Banff to Alnmouth, regarding the Board's policy, and Mr. Long will soon find that his "overwhelming majority" is a paper one. There is no need to take up the time of Parliament mending a two-year-old Act which gives all the powers required. The breeding farmer is to get real protection, the arable land, cattle-feeding farmer has no alternative but buy dear and sell cheap, or put some of his land out of cultivation and try to breed for himself. What will the agricultural population say to that? Is that the way to keep the people in the country? In the meantime, what is the cattle-feeder to do?

I observed with pleasure last week the appointment of two local veterinary inspectors by the County Council of Aberdeenshire. I am glad to see they still keep the county under proper inspection. Different from another large county I know, where only one veterinary inspector is considered sufficient to fulfil the law (the letter—not the spirit), and a few months ago he travelled about seventy miles—single journey—to inspect a "pleuro case"—a medium case of tuberculosis—still alive and like to be.

The Diseases of Animals Acts do require amending, and the places where there are visible holes should be darned first. Dr. Farquharson and Sir John Long may not get a numerical majority, but they can easily get an overwhelming, logical, commonsense one.

Objects of the Association.

In recent conversation I was asked what was the chief object of our Association meetings. I expect an answer such as—"For the mutual higher development of our veterinary knowledge and ability to cure disease in the animal world," would be considered fairly near the mark. But the interrogator replies, "Is it not true that 'Prevention is better than cure?' What are you doing in that way? Is the knowledge and advice which the veterinary lecturers give to the agricultural world likely to bear good fruit either to the owners of animals or to the veterinary profession? Or is it a case of a little knowledge being a dangerous thing?" I once saw and heard a notable horse-tamer give lectures and demonstrations, but he said he could not give us the eye to observe and the wisdom to decide when and what particular plan was decidedly best for particular cases. What is best at one stage and for some dispositions would be very unsuitable for others. The successful application of veterinary knowledge is always on these lines, therefore, I fear much of the advice both oral and in book form is of comparatively little value to ordinary agriculturists. But to instruct owners of animals in the principles and advantages of "Prevention," and show to them the great progress and real benefits which are to be derived from putting it into actual practice—"That a stitch in time saves nine," and that "prevention is better than cure," I am sure would be giving them magnificent value. For instance, just think of the deaths which take place from tetanus every year, especially in some districts. The loss from that cause alone would pay the services of the veterinary profession twice over to attend every case of external wound, however small, and give it, not only the proper antiseptic treatment, but also sanitary surroundings and internal treatment on the most recently discovered preventive methods. Also, how many cases of parturient apoplexy could be prevented if owners of cows would apply to their veterinary surgeon for one or two doses of suitable preventive medicines and advice how they should be treated at that time. Think also of the large important subject of abortion. Have we not in that particular subject—for our own honour and benefit—been a little slow. These are only samples of the good that might be done by prevention.

But whether it be prevention or cure it requires everyone to keep fully abreast of the recent, I may say every-day discoveries in scientific knowledge, and its practical application. It requires every one of us to be constantly enquiring and learning, learning not only the theoretical facts, but also, if possible, to make ourselves conversant with their practical application. For the latter purpose I think associations should have, if possible, in connection with their periodical meetings a greater amount of practical demonstrations. To make our meetings attractive and useful the first and main thing must always be attendance, and the will to give as well as the desire to receive. I think "present cases" in which any member feels any difficulty or want of success, should come first on the agenda after routine

business. Then we would have opportunity to give our experience and advice to everyone requiring it. At present we leave that part too much to the end of the meeting when there is little time or few members remaining. A chorus of thought, I have no doubt, replies that the animal world has had far greater practical results obtained for it, both in the form of eradication and suppression of disease, than in the human world, and that it is becoming a question of veterinary existence. So far, true; but the higher education of all mankind inculcates—claims—a full surrender to duty in its most complete demands and without being trammelled by the anxieties of reward or consequences. We may depend on it that when one door closes, another will open if we are worthy. Gentlemen, this is our annual meeting and I hope we will have time to hear everyone on any and every subject which he thinks will be of benefit to anyone.

Mr. T. M. Inglis, Veterinary Surgeon., Forfar, read a paper on results of several cases of

"Cryptorchid Castration."

Mr. President and Gentlemen,—The subject I have the pleasure of bringing before your notice to-day is the "results of several cases of cryptorchid castration," a subject I am sure you are all interested in, especially the country practitioner whose daily work is among all kinds of young stock, and who frequently comes across colts of the cryptorchid nature in his practice. When we meet with cases of this kind you will all admit that it presents a very annoying aspect to the practitioners as well as an unsatisfactory state of affairs to clients when the operation cannot be completed.

In my own district a very large number of young stock are reared, and I was frequently annoyed at not being able to castrate cryptorchids. After studying the matter carefully I resolved to make an attempt to operate on a three-year-old Highland colt, but had bad results. I was by no means satisfied with the cause of this animal's death, although I have no doubt the owner and his servant think it due to the operation alone, but after you hear the history you can judge for yourselves what you think might have caused death.

I consider this death gave me a lesson I shall never forget when dealing with such colts, and one which I am sure has been the means of helping me in these operations since. This case was that of a "single riglin," the retained testicle being found in the inguinal canal and of a peculiar shape. It resembled two oranges adhering to one another, each section containing a good quantity of fluid, the cord itself being exceedingly thick and short. I had a great difficulty in dissecting out the testicle to reach the cord, owing to the strong growth of fibrous tissue over the opening and testicle. I was afraid to remove the gland with the ecraseur owing to the immense thickness of the cord, and resolved to apply a caustic clam which was done, and the animal released and made comfortable.

The loose box where the patient was placed was in itself suitable and very comfortable, but it contained a window that opened into a cattle court, and directly opposite this was the door, which opened in two sections. Of course, before leaving I had the window closed as well as the door, and left orders that they were not to be left open. On my arrival at the farm on the third day I was surprised to find the animal standing with his head leaning over the under half of the door, the window open, and the men busy emptying the court behind; the steam from this court was playing through the window, filling the box and streaming out of the door. It was an exceedingly warm day, and the man in charge thought he was doing no harm when he opened the upper half of the door and also the window which was directly opposite.

This was a very awkward condition to find a patient in, especially one of this kind. After I had given vent to my feelings I examined the animal and found his temperature about 105°, but the wound itself did not present anything unusual, and, notwithstanding the elevation of temperature, he was eating fairly well. From what I had seen, however, I made up my mind for a fatal termination. Next day I saw the colt and removed the clam, cleaned out the wound with an antiseptic lotion, and bathed the parts well.

Having talked pretty plainly to the stableman the day previously, I now observed that he had turned sulky and careless, and did not seem to care whether the colt died or not. This was very annoying, as I could not visit the animal more than once a day, the distance being more than ten miles from my residence. When I called next day I found the colt swollen to an alarming extent and purging slightly; the temperature still elevated, but the appetite remained unaltered. I ordered plenty of hot fomentations from the first and also dressed the wound daily, but to no purpose. This treatment was kept up until his death, which occurred on the sixth day after the operation. I did not get an opportunity of making a *post-mortem* examination, but was of opinion that death was due to *septic peritonitis*. Although my first attempt to castrate colts of this nature proved unsuccessful, still I was not inclined to think that death was due to the operation itself. Some time after this first case I came across several cryptorchid colts, but hesitated operating until I was strongly prevailed upon to do so. I got every encouragement from my clients and also from the Horse Insurance Company, who were willing to take the risk at a very moderate premium. I got loose boxes specially prepared at my own yard, and had two subjects sent in to me at one time. The first was that of a harness cob, rising three years-old, with the near side testicle missing. I cast him as I usually do, on a small grass park, put him on his back, and operated in the usual manner. I explored the inguinal canal but could not find anything resembling a testicle, and therefore had to work my hand gradually through the inner ring into the abdomen. Finding the testicle or spermatic cord, in my opinion, is always the most difficult part of the operation for the unpractised, and when my hand entered the abdomen in this case and no testicle to be found at first, I must confess I felt a little put about. I continued my search throughout the cavity and was rewarded, after struggling for nearly an hour, in findingthe gland floating at one side near the rectum, the patient, of course, being on his back. After grasping a firm hold of the testicle I brought it through the opening with very little difficulty, and then removed it with the ecraseur. After stitching the wound and removing the other testicle, we allowed him to rise, and, although a little stiff, he walked into his box and soon settled down. We got out the other colt, a strong Clydesdale, rising three, with near side testicle also missing. Failing to find any trace of the testicle in the canal I had to penetrate the abdominal wall. In this case the bowels were nearly empty, and the animal was otherwise in a better condition for operating upon; therefore I had very little difficulty in finding the retained testicle, which was lying about the same region. Both these animals made a good recovery, although the first one operated upon began to swell a little in the groin after he had healed up, but after a few days it disappeared, and he is now doing well. The Clydesdale one did not swell much, and very little discharge came from the wound. Of course, I saw them several times daily, and paid strict attention to the surroundings and diet.

Encouraged by both these cases being a success, I did not hesitate to operate on such animals again. The next case I had was that of a half-bred colt, rising three years old, with near side testicle missing. After making the

incision and passing the fingers through the connective tissue, I found the testicle lying in the inguinal canal, which made the operation very simple, being, in fact, just like ordinary castration. I did not stitch the wound in this case, but this colt also made a good recovery. Since then I have operated on a good number of animals of this kind, and have come across some very peculiar testicles. In my experience it is quite common to find retained testicles diseased, and this past summer I had occasion to have two in one week affected very similarly. The first case was that of a colt, 2 years and 5 months old. After casting and making the incision, I introduced my hand, explored for a very long time, and with much difficulty found something resembling a testicle, although extremely large and soft. Several times I felt this abnormal-like gland, lying over against the right kidney, but was not inclined to think I had found the testicle. However, after a considerable time, and finding nothing else resembling that, I set to work to get it through the opening. I brought the cord out first (double), and pulled gently with one hand, then pressed my other hand in between the testicle (which the traction had now brought to the abdominal opening) and the ring, and so manipulating it, managed after some time to get it out. The cord was very long and strong, and the testicle quite as large as an ostrich's egg. The veterinary surgeon of the district, a very old gentleman, was present to see the operation, and when I brought this bladder-like testicle to view, he shook his head and told me to take care. I turned it over two or three times, and finally discovered the "epididymis," but this and the cord were the only remaining parts of the testicle. Finding the bladder all right in the pelvic cavity, I removed the testicle and stitched up the wound. The colt rose to his feet, and although very stiff and staggery, was able to walk into his box. I left him for a few minutes, and when I went to see him again, was astonished to see the intestines appearing between the stitches in the wound. Not wanting to alarm the owner or the others, I said it was nothing serious, and made preparations to have him cast again. Whenever he moved, the protrusion seemed to be gradually growing larger, necessitating my casting him where he stood. Although he showed symptoms of great pain, he was not difficult to cast. I got him on his back, washed and bathed the protrusion, and then reduced it carefully into its normal position, restitched the wound and allowed him to rise. In about half-an-hour he took a chilled drink, and was not long before he settled down. The vaginal sac contained about 14 ounces of fluid, and a very imperfectly-developed testicle.

The second case was that of a colt, sixteen months old, with off-side testicle missing. With this one I had not so much difficulty, as I readily found the testicle, which was lying in the pelvic cavity beside the bladder. Although firmly adherent, it was not difficult to get out. This testicle was very much smaller than the former one, and, therefore, did not offer so much resistance when getting it through the ring. I am glad to say both these colts made a perfect recovery. I sent the smaller testicle of the two to Principal Williams and he informed me that it contained $4\frac{1}{2}$ ounces of serous fluid and an atrophied, though apparently normally constructed testicle.

Another animal which I operated upon was a powerful three-year-old pedigree Clydesdale with one testicle missing, the other having been removed when a yearling. I had considerable difficulty in finding the testicle in this case, and when found I could not get it separated from the omentum within the abdomen. I seized a firm hold of the testicle and omentum, pulled both through the ring, separated the testicle, removed it and returned the omentum. This animal also made a good recovery and is now a valuable gelding. In the majority of my cases the testicles have been within the abdomen itself, very few of them being in the canal. I have found some of them adherent to the

inner ring, and when an attempt was made to get hold of them through the ring they would lose their attachment and drop down amongst the bowels, but as a rule they were not difficult to recover. The great majority of retained testicles certainly appear degenerated, and if they are found normal in size, they are flabby in texture, and wanting the usual tensity.

I prefer to castrate cryptorchids in the summer time as I have had best results then. I select that season because in a country practice the spring work is over, and anyone who has a practice in a large breeding district will know what spring work means. With foaling, calving, or removing a fœtid afterbirth it is almost impossible to keep the hands safe, no matter what is used to cleanse them. In my opinion the condition of the hands is of more importance than the weather. We can alter a stable or box to suit the weather, but I never feel safe for at least two days after handling fœtid material. I am extremely particular with the box the animal is to be placed in after the operation. I usually issue orders to select a box as far away from a cattle court as possible, and to be sure that no artificial manure has been in it for some time. After the box is selected I order it to be thoroughly cleaned out, whitewashed, and the floor sprinkled with a coating of dry lime. This is usually done a few days previous to the operation. On the morning of the operation a good bed of sawdust is put into the box. I always make the bed of sawdust as it gives the box a sweet smell, and a deodoriser can easily be mixed through it if necessary. I like, if possible, to get pine sawdust; but it cannot always be got in a country district.

Castration of cryptorchids requires some practice and very careful antisepsis. I am exceedingly careful to observe the strictest cleanliness of the hands, instruments, and surroundings, and refuse to operate unless my orders are fully carried out. I would rather disappoint the owners of such animals by not turning up at the appointed time than run the risk, if I were not sure of having clean hands. The animal is prepared three or four days previous, and the bowels kept as empty as possible. When the animal to be operated upon is being brought out, particular attention should be paid that the man leading him does not take him through a wet cattle court or other places where he may get his feet and legs into a very dirty condition. This is very annoying when securing the feet, it being impossible to avoid soiling the hands. I always cast with a rope, and secure the animal when down with a large broad belt to each hind leg, the fore ones being secured in hobbles attached to a girth round his middle. I prefer brown leather strappings and the rope to black hobbles and chain, because in adjusting the former the hands can be kept clean, which, as I have already remarked, is the most particular part in aiding the operation.

Finding the testicle, as a rule, is extremely difficult; but if the operator has a small hand, it makes it easier for him to penetrate the canal. Sometimes it is difficult to distinguish a loop of bowel from the testicle, but the testicle can be known by its firmness and sharper outline. It is rather a strange feeling when exploring the abdomen to feel the different pulsations and organs, knowing that, by accident, one might be ruptured and cause immediate death. However, after performing on a few and having been successful, one gets over this slight nervousness, and becomes quite bold at the operation.

After the operation I stitch the wound with strong tape, taking good deep holds and remove them whenever I think it is safe, usually about the third day, but, if the operation has been severe leave them longer. I do not like to confine the wound too long, but am anxious to get the stitches out as they must irritate, cause swelling, rapid closing of the wound, and confine the discharge. I wash the wound several times daily with an antiseptic, and if the parts swell I open the wound a little, but not unless. After the operation the patient invariably exhibits symptoms of colic, but it soon passes off. He may also shiver a good deal when he cools down, and when this appears I

always have him covered. The day after the operation he is generally found standing with his hind quarters in a corner and usually scraping with his fore-feet a good deal. He may stand in this position for a day or so without moving much. On the third and fourth day I usually find an elevation of temperature, but about the fifth day it begins to subside again. If it does not, then I know I should open up the wound well. As a rule little or no pus is formed, but should it appear I always see that it gets free escape. In some cases I have seen slight lymphangitis on the side operated upon but it passes off in a few days.

A great many opinions are formed about the cryptorchid condition being hereditary. Experience has taught me that it is undoubtedly hereditary. I have invariably seen and heard of cryptorchid horses leaving their stock the same. The colts I referred to being similarly affected were both after the same horse, and this horse left a good many more of the same kind. This horse, however, I believe was right enough himself, although I am told his sire was a cryptorchid. I have tried to put together these disjointed notes which have been formed in the midst of other duties, and have given my actual experience of this form of castration.

The PRESIDENT, in inviting a discussion upon the paper, said he was sure they had all listened with pleasure and profit to Mr. Inglis' remarks. This was a subject which was comparatively fresh, and afforded plenty of scope for discussion.

Professor MCCALL, jun., said he had listened with very great pleasure indeed to this paper. He was sorry to say that up to the present he had no experience in this subject. He intended, however, next summer to see one or two cases. At present a friend of his was looking at some cases, and he would bear in mind the remarks of Mr. Inglis in regard to the operation, and if he was as successful as Mr. Inglis had been he should be very pleased indeed.

Mr. STORIE, East Linton, said he had had no experience of these cases at all, but he had listened with great interest to the paper, which showed that any veterinary surgeon might make the attempt at any rate to perform this operation.

Mr. ANDERSON, Glasgow, thought Mr. Inglis had so thoroughly exhausted the subject that very little could be added. He considered the antiseptic treatment which Mr. Inglis practised was the right one.

Mr. FREW, Glasgow, was very glad that he held a city practice, for there was a great deal of trouble with animals of this kind in country practices.

Mr. BAIRD, Edinburgh, said he had long been in practice, but he had never operated in such cases. It would be a very laborious time in the spring if these operations had to be performed then. He was very glad to hear that the operation was becoming so popular, because at one time Farmer Miles was the only one who was supposed capable of performing the operation.

Mr. SPREULL, Dundee, said he had never gone into this operation, but the description which Mr. Inglis had given corroborated anything that he knew of the subject.

Professor W. OWEN WILLIAMS related an experience which he had last summer. He had to operate upon a colt which had only one testicle, and this was a very large one indeed. They decided to try and find out the one that was concealed. He made an incision down by the inguinal canal, and after some trouble introduced his hand. The friend who was operating with him inserted his hand at the rectum, and several times they felt each other's hands. As a matter of fact, he did not find the testicle they were in search of. He operated for fully half-an-hour, keeping the colt under chloroform. He felt his liver, kidneys, and most of his bowels. He was glad to say that the colt was now doing very well indeed, and, seemingly, he could not have had a second testicle. The other testicle was removed afterwards.

Principal WILLIAMS said he had not had much experience in these cases, although he had performed some operations. He could not say that the operation had turned out to his satisfaction. The operation only showed the liberties they could take nowadays with antiseptic treatment. Operations which could not have been attempted in former times could now be performed with very great benefit and success. Of course they all remembered the time when Farmer Miles came from America to castrate these animals. He did not think Farmer Miles was ever as successful as Mr. Inglis had been. A more complicated system of castration than that of Farmer Miles he never saw. He used among other things a "stent" cross—a piece of wood forked at both ends in order to keep the legs apart. In his opinion it was a bit of American bunkum to throw dust in the eyes of the British public. Other men had followed, and been far more successful than Farmer Miles was. There were still quacks in the world. Not very long ago a colt was operated by one of those fellows in the south of Scotland, and an alleged testicle was sent to him (Principal Williams) for examination. When he examined it he found it was a small gland. The animal afterwards died, and then the real testicle, which had been removed according to the operator, was found adhering to the kidneys. It was an abnormal testicle—one of those peculiar things that they every now and then met with in practice. When a gentleman, like Mr. Inglis, brought a paper before the Society and gave facts which showed he was successful, he was sure they must give him every credit for having improved upon the operation and also for taking every care to perform it antiseptically and scientifically.

The PRESIDENT did not think he could add anything useful at all to what Mr. Inglis had so well said in the matter. Mr. Kitchen, of Belford, and himself had operated upon three or four cases. The first was a two-year-old, and the operation was performed nicely. One of the testicles had been taken away previously. The horse went all right till the following spring, when a secondary abscess took place, which brought him down a bit. The second horse was operated upon shortly afterwards. He was a magnificent brougham horse worth three figures. He was five or six years of age. He was cast with hobbles in the ordinary way. He kept on his feet till the last, and then he made a plunge forward, going on his shoulder, and fell with a flop upon his hind quarters. This animal was put under chloroform. He certainly thought this was an operation which should be performed with chloroform. This horse took more chloroform and was longer affected than any other animal in his experience, either before or since. The testicle was found after some difficulty, and taken away in the ordinary way. After the horse got up he was put into a stable, where he soon afterwards began to tremble, and he looked in an awful condition. They gave him some sedatives and oil. Next day they received a message that the horse was done up, and that it would be dead that night. He could not imagine what could have brought this about, because when they left the horse seemed to be going on beautifully. When he arrived next day at the place they were making the grave. On examination he discovered that in being cast, the plunge which the horse made had ruptured the intestines or the stomach. The owner was perfectly satisfied that the horse had died through an accident in the casting, and not owing to the operation, and he declared that if he had another horse in the same way he would be quite willing to have the operation repeated. The third horse on which he had operated was a three-year-old, and there was nothing extraordinary about him. After performing the opening portion of the operation himself, he could not get a hold of the testicle, but Mr. Kitchen managed to do so. They must bear in mind that although they got in their hand they could not always seize the testicle at once. The fourth horse upon which he operated was a two-year-old, and the operation took

place during the summer before last. The horse was somewhat deformed. He was rather diminutive. He was a little down in the back and a little up in the loins, with a curvature of the spine. He cast the horse and expected the testicle to be found all right. On the side nearest them as he lay there was a very small testicle, and there certainly seemed to be the appearance of a second one. He made an incision and thought he would find the testicle at the end of the inguinal canal. As he could find nothing he went further into the inside and explored for a good while. As the one was so very small he concluded that the other would be even smaller, and that it would be like looking for a needle in a haystack. He did not think there was anything special about this operation with cryptorchids to frighten anyone from attempting to perform it successfully.

Mr. RUTHERFORD proposed a vote of thanks to Mr. Inglis for his admirable paper. He was very pleased that an old pupil of his own had distinguished himself in the performance of this difficult operation. He could not understand how Mr. Inglis got over the difficulty of passing his hand up the inguinal canal and through the abdominal region. In India, he used to experience the greatest difficulty in getting two fingers through the inguinal canal. It seemed to him that either the horses of this country were differently constituted from those in India, or there must be an immense amount of tearing of the parts. He could not imagine how the arm was passed through the inguinal canal and through the ring, unless there was some tearing. He wished to know whether the ring was dilated, or if he tore it.

Mr. INGLIS replied that the ring had to be torn. It did dilate a little, but it gradually ruptured. He did not like to use an instrument at all. He liked to tear it with his hand.

Mr. MOIR corroborated the difficulty experienced in Eastern Countries, to which Mr. Rutherford had referred. In many cases it was only the point of one finger that could be inserted, and a great number of the cases died. Very often in cases of strangulated hernia, the cases were pretty well advanced, especially in a hot country, where the inflammatory process was very rapid. It had always been a mystery to him how they had been able to manipulate in this country the inguinal canal in the way operators seemed to have no difficulty in doing.

The vote of thanks to Mr. Inglis was cordially passed.

The late Professor Walley.

The PRESIDENT called attention to the subscription being raised for a memorial to the late Professor Walley. It was for them to consider what they intended to do, and to give an opinion what form the memorial should take. It had been suggested that the memorial should take the form of a statue, or a bust, or a bursary. Some were also inclined to vote the money to Mrs. Walley and family.

Mr. MOIR stated that the Society had received a circular on the subject from Mr. Finlay Dunn, and it was felt by some of the members that they, as a Society, should give a subscription to this deserving object.

Mr. RUTHERFORD said he had been at one committee meeting, and had raised the question that something should be known as to the direction the memorial should take, but it was felt to be the opinion of the majority of those present that they would prefer the subscribers themselves to state what direction the memorial should take, and, further, that that should not be given effect to until it was actually known how much was subscribed. For instance, he suggested that as Professor Walley was a public man, they should establish a bursary to be open to all the Scotch schools, tenable for 3 or 4 years, as the profession might wish, and payable to whoever might be the best man of the year for the purpose of furthering his medical or

veterinary education. It might take the form of a bust, which he thought was a very unmeaning thing. Probably the wishes of the profession would be best met by something in the nature of a bursary.

Principal WILLIAMS thought the committee were making a mistake. A bust or a portrait would be right enough, if it was a small subscription; but he thought it would be a far better service to get up a large subscription for those who were left behind. He felt that if they went on these lines, more money would be subscribed by the profession.

Mr. COLIN BAIRD, Edinburgh, thought the best thing they could do was to raise a large sum and invest it for Mrs. Walley and family.

Principal WILLIAMS assented to this, as being the best suggestion.

The PRESIDENT thought they need not go further into the subject, and it was unnecessary for him to recommend it more heartily as they were all agreed that they should give something. He thought they might leave it to everyone individually. He did not think they had sufficient funds belonging to the Society to enable them to give a subscription which would be worth distribution by itself. He thought the best course was to leave the matter to each individual.

This was agreed to.

Grunting in Horses.

A resolution of the Lincolnshire Association on the subject of grunting in horses as a decided cause of unsoundness, and as a sufficient reason when detected for the rejection of an animal subjected to veterinary examination, was submitted for discussion, and the opinion of the Society.

Principal WILLIAMS said the subject was one on which there might fairly be a division of opinion. He had known many grunters that remained perfectly sound, and others which had become unsound in their wind. Personally he never thought of depending on the grunt, and Scotch veterinary surgeons as a rule did not depend upon it to the same extent as English surgeons. Each case must be taken on its own merits. He himself in his practice did not depend on the test of "grunting;" he always tested the horse's wind at the same time. A horse which "grunted" might be perfectly sound in wind at the time of examination, although it would probably go wrong in that respect afterwards. In giving a certificate, a practitioner ought always to mention that the horse "grunted" if that was the case. At Tattersall's the stick was the only test. If the horse grunted they rejected him; if not, they passed him. He maintained that this was not a test at all to be depended upon.

Mr. MOIR said that horses which grunted to the stick, although perfectly clear in their wind, were very apt to become unsound, which fact experience had taught those who dealt in them so effectually that their mercantile value was much reduced by it. While he would not say that grunting was a cause of unsoundness, it was certainly an indication of unsoundness, and he would qualify any certificate he gave of a horse that grunted. With regard to the commercial aspect of the question, he said that a horse which grunted dropped from 30 to 50 per cent. of its value, and any professional man who warranted a grunter sound, assumed a heavy responsibility.

Principal WILLIAMS insisted that all horses should be sufficiently tested before purchase. They all knew the legal maxim *caveat emptor*, and if a purchaser took a guarantee of a horse being sound in wind and eyesight without testing him with a stick he was buying a pig in a poke.

Mr. R. RUTHERFORD said he never gave a clean certificate to a horse which grunted. He decidedly objected to say that a horse was sound if he grunted, no matter how slight. He pronounced in favour of grunting being unsoundness, but he did not attempt to say what it was from. They m have noticed that some horses grunted on inspiration and some expiration.

Mr. ANDERSON, Glasgow, said that undoubtedly he would never think of passing a horse as thoroughly sound if it grunted, although he had recommended customers to purchase horses which grunted, because they did not show anything wrong with their wind.

Mr. BAIRD considered a grunter was not a sound horse. A great many horses which grunted ultimately became roarers. A man would be putting himself in a false position if he gave a certificate of soundness to a horse that grunted without mentioning the fact.

Mr. MOIR thought it was well that the Society should formulate some expression of opinion on the subject.

Professor W. O. WILLIAMS moved "that in the opinion of this Society grunting alone is indicative of a tendency to unsoundness of wind, and should be guarded by special warranty.

Mr. ANDERSON, Glasgow, seconded the motion, which was adopted.

Combination among Veterinary Societies.

A letter was read from Professor Macqueen, submitting several suggestions with the view of promoting union among the members of the profession by the affiliation of local societies with the National Association. The Professor wrote that recent events touching the best interests of the profession had shown the necessity for some sort of representative union, the object of which would be, among other things, the bringing forward of the claims of practitioners to all legitimate appointments, especially in the hands of the Government.

Mr. MOIR said the object was to get prominent men from the local societies elected to represent them at the National Veterinary Association, so that important matters in connection with the profession should be taken up by the National Association. There was no doubt the idea was an excellent one.

The letter was remitted to a committee, consisting of Professor Bradley, Mr. Rutherford, and Mr. Moir.

Place of General Meeting.

Mr. MOIR pointed out that the Society had already gone to the north, the east, and the west for their summer meetings, and he suggested that they should now go to the south. He proposed that they should visit Kelso. Other places in the south were also mentioned, and ultimately it was agreed that the summer meeting should take place at Melrose.

Annual Dinner.

The members of the Society afterwards dined together. Mr. Cameron occupied the Chair, and Mr. Moir acted as croupier.

Captain APPLETON, Inniskilling Dragoons, proposed "The Royal College of Veterinary Surgeons."

Principal WILLIAMS, in reply, said he was a very old member of Council of the College, and had spent many happy days with his friends in London, but within the last few years it seemed to him that the work of the College had been to make one law to-day and to rescind it to-morrow. The great question before the profession was whether students should be admitted to the first professional examination without having passed an educational test equal to that of the medical profession at one sitting. He considered that such an enactment would be most unfair, and that so long as a student passed the educational test it was immaterial whether he did it at one sitting or at two, three, or more sittings. He maintained that the educational test was too high; a good education with a knowledge of a modern language was sufficient. It was, in fact, a question not of educating the veterinary surgeon, but of educating his clients which should be pressed. The term "degraded" had

been applied to the educational certificate of those who passed in sections. He did not say it was degraded. How long would they retain their Greek and higher mathematics after going into practice? As a matter of utility during after life, he maintained that Greek and higher mathematics would be of no use to him whatever. The man of common sense would get on, whether he had any high education or not.

Mr. ANDERSON, Glasgow, proposed "The Scottish Metropolitan Veterinary Society," and in doing so remarked that a petty readiness to take offence which seemed to prevail among veterinary surgeons accounted for the apathy which was noticeable in many of their associations. The least remark by one member seemed to give offence to certain other members.

The PRESIDENT responded to the toast.

A pleasant evening was spent by the members of the Society.

PETER MOIR, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner in connection with the above association took place at the Queen's Hotel, Leeds, on January 21st, 1896; the president, Mr. J. Clarkson, Garforth, in the chair. The following members were present: Messrs. J. Clarkson, Garforth; M. Robinson, Barnsley; F. Thompson, Harrogate; J. W. Lazenby, Boston Spa; F. W. Clough, Morley; A. W. Mason, H. G. Bowes, J. Brand, W. F. Greenhalgh, G. E. Bowman, Leeds; G. Whitehead, Batley; G. Pickering, J. Cooke, Scarboro'; H. Snarry, York; P. Deighton, Selby; J. E. Scriven, Tadcaster; F. Somers, Leeds; J. S. Carter, Bradford; F. Hallilay, Dewsbury; S. Chambers, Kirkheaton; A. W. Briggs, Halifax. Mr. A. J. Lane, Leeds, and Vet.-Capt. R. W. Raymond were present as visitors. The SECRETARY read letters of apology from Professors Williams and W. O. Williams, Edinburgh; Dr. Cameron, Messrs. W. Awde, S. Wharam, Prof. Penberthy, H. Spark, Leeds; W. Hunting, London (telegram); J. C. Collings, Otley; T. Pratt, Ripon; C. T. Lang, Bridlington; J. A. Hodgman, Barnsley; T. Fletcher, Sheffield; Professor Charles Steel, A.V.D., Yorkshire College, Leeds; H. D. Chorlton, Manchester; H. Pollard, Wakefield; and Professor McFadyean, London (post-card).

On the motion of Mr. SCRIVEN, Mr. J. Abson, Sheffield, was nominated as a member.

Grunting in Horses.

The circular letter from the Lincolnshire Veterinary Medical Association on the question of grunting and its relation to soundness was read.

The PRESIDENT considered the matter one of great importance; but, so far as the profession coming to a unanimous opinion on the subject, he thought that was hardly possible.

Mr. A. W. MASON (Leeds) alluded to the differences of opinion on the subject, and said he could not go so far as to positively assert that an animal was absolutely unsound because it groaned or grunted. At the same time he thought it was their duty to mention the defect of grunting, if discovered in a veterinary examination, to their clients.

Mr. G. E. BOWMAN supported the position taken up by the Lincolnshire Association. He said his experience with young stock was that in nineteen cases out of twenty horses that grunted became roarers in the course of a few years. A horse which groaned was not sound.

Mr. PICKERING agreed with Mr. Bowman.

Mr. BRIGGS said he never remembered a horse which grunted against a wall that did not go wrong. He would not buy nor pass a horse, whether a light or heavy animal, if he grunted against a wall.

Mr. J. COOKE, speaking more particularly of the lighter breeds of horses,

observed that he should not pass a grunter as being sound. Under all circumstances the discovery of the defect should be mentioned to the buyer.

Mr. BOWMAN asked subsequent speakers to say whether they had ever known a roarer that was not a grunter.

Mr. PICKERING replied that he had known of a case where a confirmed roarer was not a grunter.

Mr. SNARRY said that grunting, as they understood the term, was unsoundness.

Mr. CARTER was also of this opinion, and added that he could not recollect a case of a roarer that did not grunt, either more or less.

The PRESIDENT said they might safely say that, as a general rule, roarers were grunters.

In reply to Mr. Briggs, the President said it appeared from the discussion that they were all more or less agreed as to the desirability of always acquainting buyers with the defect, if discovered.

Mr. SCRIVEN said he certainly should say any horse which grunted was not sound.

After some further discussion, Mr. Briggs moved, and Mr. Thompson seconded, the following resolution:—"That, in the opinion of the members of the Yorkshire Veterinary Medical Association, grunting in horses is a decided cause of unsoundness, and is a sufficient reason for the rejection of any animal so affected, when submitting to veterinary examination."

Some objection was taken to the words "a decided cause," and the mover and seconder consented to their omission. With this limitation the resoiution was ultimately adopted unanimously.

Suggested Amalgamation of Local Societies.

Mr. MASON said he had received a letter from the Secretary of the National Veterinary Association (Professor Macqueen), who asked him at the first opportunity to bring before the members the necessity for some sort of representative union, whereby prompt, energetic, and confident action could be taken to urge, among other things, the claims of practitioners to all legitimate veterinary appointments, and to support the predominant feeling concerning all matters of professional importance. The machinery for such union already existed. The only thing wanting was an understanding as to combination and movement. It had been suggested that the various local veterinary societies should be invited to join the National Veterinary Association, and, doubtless, it would not be difficult to devise a simple plan that would meet with ready acceptance or approval. To serve merely as a basis for consideration, the following suggestions were made:—I. The local veterinary societies should preserve their present independence as to meetings, discussions, and subscriptions, and agree to join and support the National Veterinary Association on questions of general professional import, whether of practice or of veterinary politics.

II. All effective members and affiliating societies should become, by virtue of affiliation, effective members of the National Association without further individual subscriptions.

III. To meet the expenses of the National Veterinary Association, each affiliated society should pay annually to the National a compound subscription, the amount (equal to a small sum per head) to be fixed in accordance with the membership strength of the local society.

IV. Each affiliated society should be represented by two or more members on the Council of the National Veterinary Association. In other words, the Council, or other responsible committee, should consist of delegates from all the affiliated societies. Thus constituted, the Council's decisions would be representative and truly national.

If the members of the Yorkshire Veterinary Medical Association agreed to entertain the substance of these suggestions, perhaps they would appoint a small committee to consider the details and report. Since receiving the letter he (Mr. Mason) had seen Mr. Macqueen, who informed him that some local societies had taken the matter up.

The PRESIDENT was of opinion that there was a good deal in the scheme which required careful consideration, although Mr. Briggs did not believe in the National or any other association dictating to them as an organisation.

Ultimately it was agreed that the Secretary be asked to write Mr. Macqueen for full details to be circulated among the members, it being understood that the matter would be brought up again at the next meeting of the Association.

One or two points arising out of the paper read at the last meeting by Mr. Pickering were next discussed, among the speakers being Mr. MASON, Mr. COOKE, Mr. ROBINSON (Barnsley), and Mr. BRIGGS.

Presidential Address.

In the course of his address the President expressed his appreciation of the compliment paid him, and said he would endeavour to uphold the dignity of the chair and maintain the usefulness of the periodical, pleasant and instructive meetings. Touching upon topics of interest to veterinarians, he remarked that the most burning question of the day, and, perhaps, the one which most nearly affected them as a profession, was the stamping out of contagious diseases, as carried on by the Animals' Department of the Board of Agriculture. Few among them would, he thought, care to defend the system at present in vogue, and, judging by the results both in swine plague and rabies, few would venture to call the work of the Board a success. The present method of arranging for an inspection of a suspected outbreak by the local veterinary officer allowed far too great a delay to occur, far greater than in the days of the old local authority. In some instances two and three days elapsed before the diseased or dead animal was seen and reported upon, and here a very great hardship to the owner must arise, because he understood if the animal died in the meantime no compensation was paid, to say nothing of the greatly increased danger of spreading the disease by this delay. What condition the viscera would be in when they arrived in London for examination he did not know, but he thought putrefactive bacteria would have had a very fair innings. It always seemed to him somewhat of an anomaly that the veterinary inspector should be allowed to decide in the case of living swine, when diagnosis was often extremely difficult, but when he had the opportunity of examining the viscera in addition, he had practically no say in the matter; he was simply a forwarding agent. With regard to the rabies order, he was of opinion that the muzzling of dogs to be of any use should be made general, and not local—a regulation muzzle adopted and the order strictly enforced for a time at least. Rabid dogs were notorious travellers, and recognised no boundaries as set out in police orders. In reference to the recent appointment of chief officer and other appointments, he thought the veterinary medical profession had been shabbily treated. Altogether the methods of procedure in the Animals' Department were as inscrutable as the face of the young lady novelist's hero, and an all-sufficient commentary on their work was the result, which was, to all intents and purposes, a failure.

He noticed that only 787 replies had been sent in to the 2,758 circulars issued respecting the important question of compulsory notification. Of the 782, 588 were in favour of adopting the Act, but some on certain conditions. Compulsory notification by veterinary surgeons would, he felt sure, be an accomplished fact in the course of time, and it was for them to see that they were neither neglected nor imposed upon in a matter which was so important to them.

In the circular in question nothing was said concerning what diseases it was intended to include, but he presumed the present ones affected by the Contagious Diseases (Animals) Act were the ones intended, with any other that it might be thought necessary to add from time to time. They must endeavour to see, when the time came, that the enforcement of the Act was general, and not left to the option of the local authority, because partial enforcement would only open the way to endless difficulties. At present they had no suitable officer to whom to notify, and most of them would object to being compelled to do so to the local policeman.

This brought him to a subject which, though he conceived it his duty to discuss, he approached with the greatest reluctance. He had first spoken of the desirability of pulling together, and he was now reminded of their motto, "*Vis unita fortior.*" Did they live up to it? Did they help each other as they should? Or was competition becoming so keen that they were treading on and climbing over each other to achieve success? One was almost inclined to think the latter when one saw veterinarians (and men high in the profession) appearing against brother veterinarians in cruelty cases. He need hardly say that he was more particularly alluding to the recent case in Leeds, in which two veterinary surgeons were summoned for cruelty to a horse while under their care for treatment, but which happily broke down without the defence being called. He would make a distinction between the resident veterinary officer of the R.S.P.C.A., who had seen the case and was subpœnaed, and gave evidence according to the best of his belief; and the expert who travelled by the night mail from Yokohama, Jerusalem, or Japan, knowing practically nothing of the merits of the case, except for the prosecuting society, until he heard the evidence in court. Almost the only thing he knew when he started from home was that he was expected to give expert evidence against his fellow-practitioner. He had no wish to claim immunity from prosecution for their profession, but at any rate do not let them help the opposing forces; let them all try to defend their little citadel. Individually they might not be able to help each other much, but at least they could all refrain from harming one another. The regulation of the prosecutions for cruelty to animals should be in the hands of the Government, and not in the hands of a voluntary society which had to depend for its success on the number of subscriptions it could catch from the public, the bait naturally being its success as a prosecuting society. With the objects of the R.S.P.C.A. he had every sympathy—not one present abhorred cruelty more than he did—but with its methods he had very little sympathy. Interference by the society with a veterinary surgeon in the legitimate practice of his profession he regarded as unwarrantable. The veterinary surgeon of all men was the one to know where necessary suffering ended, and unnecessary suffering began. He contended that the veterinary surgeon in attendance, and who had watched the case from day to day, or hour to hour was the man to suggest and direct the treatment, and not the R.S.P.C.A., in whose councils he was afraid the veterinary adviser often only played a very minor part, and whose energies were largely directed by its uninformed officials—men whose reputation as energetic servants, nay, whose very existence as officers of the Society depended on the number of convictions they were able to obtain, and whose existence was often only equalled by their absolute certainty in the infallibility of their own opinion. To return to the recent Leeds case. There was a brighter side to the question, for it was very pleasing to see that there was no lack of professional witnesses ready to appear for the defence had they been necessary.

He was glad to note among the various veterinary societies an increased desire for wider views by the more frequent interchange of letters on interesting subjects for discussion. This was a step in the right direction, and should lead to very great good.

During the past year the world of science had had many gains and many losses. Of the latter the chiefest was the decease of M. Pasteur, the greatest scientist of this century, or, perhaps, of all time. Their losses as a profession had been many and heavy, and their own association had lost two of its oldest members and greatest ornaments—men who were regular in their attendance —earnest in their endeavours for the good of the profession. Their places would be very difficult to fill.

Immense strides were being made in diagnostic methods and new remedies. The two diagnostic tests, tuberculin and mallein, had now been before them long enough to enable them to form an opinion as to their value, and though doubt had been cast on tuberculin in Denmark, it might fairly claim to be a success in this country. Of the many new serum remedies it was yet too soon to judge properly of their permanent value. They seem, undoubtedly, to possess value, and as it was a new branch of medical science further developments might be expected, as very great benefits accrue therefrom. But the most startling discovery was that of Professor Röntgen, and as his assertions appeared to be borne out in England they might be taken to be correct. This new photography was in its infancy, and who could predict what the result might be? In human practice it was already being employed in very many diseases, and for many purposes. If what was claimed for it were true, he saw no reason that it should not be used in veterinary practice, say, for instance, to determine in the existence of spavin, or how far a splint extended below the ligaments or tendons. It might also be useful in those doubtful cases of injury to the back, and in hip disease, and many other cases.

They must all feel gratified that the Council were taking vigorous steps to prevent the quack assuming to himself the title of veterinary surgeon. Convictions were becoming very common; almost every day occurrences now. The penalty was as yet only small, but as time went on, and the offenders were better warned, no doubt it would be increased. This protection of its members was a duty which the College owed not only to itself, but also to the public, because very few of them were in a position to ascertain whether they were employing a qualified man or not, and in this personation discredit was often brought on veterinary surgeons as a body. Quackery could, of course, never be stopped. Any man had a right to experiment with drugs on his neighbour's horse, provided his neighbour allowed him, but he must not practice deceit as to his identity. Following closely was the question of medicines, with which the market was flooded. This, too, was trespassing on the ground which the veterinary surgeon rightfully looked on as his own, and he must admit he knew of no remedy for the abuse, except in the case of M.R.C.V.S., many of whom, he was sorry to say, had remedies which they advertised on their own account, and others covered firms who manufactured them. This should be, and no doubt some day would be, prevented by the Council, who were able to control its own members, if not outsiders. If the remedies were always harmless he would not grumble so much, but in some cases they were far from it, and many cases one was called to had received a glorious mixture of this firm's "stomach smoother" and that firm's "liver brightener" on the top of someone else's "prescription for waking the dead." It was by no means easy to diagnose which symptom belonged to the disease and which to the so-called remedy. It would be far better if their clients, instead of buying a lot of this sort of thing, would either give a simple remedy of their own, the compound parts of which they knew, or procure a reliable one from their own veterinary surgeon, who would be called in if the case did not progress favourably, because he would then know exactly what medicine the animal had received, and he could treat it accordingly. He (the President) might be somewhat biassed in his views, but his experience was

that the client who called in his veterinary surgeon in good time was the greatest saver; he had a lesser account at the end of the half-year, and was subject to far fewer losses among his stock. If disease got a firm hold it meant a longer attendance and often only a very poor ending.

He had great faith in the future of their profession, because the more the public became enlightened the more they would see it was to their advantage to employ them. He did not take at all a pessimistic view of the future. Even the invention of an autocar, and the passing of a bill to allow it to run on the road, did not shake his optimism. The same danger was supposed to threaten when steam came into use, and yet the horse tribe was by no means extinct. Bearing on this subject they should all see a very smart little parody which appeared in a recent number of the *Record*. In conclusion, the President said that at the close of the year he should like to leave the Society none the worse, but just a little better than he found it, financially, scientifically, and socially. Those meetings were more than meetings pure and simple for the discussion of interesting subjects; they met there and gripped each other by the hand; little differences could be explained, life-long friendships formed and strengthened, and the profession as a body advanced. The interest must be maintained, and he looked to the members to do it for him by taking papers and interesting cases for discussion. He had an idea that the short cases by their variety often created most interest, and if it met with their approval and was quite legal, they might at one of the current year's meetings arrange for a full array—say a dozen or more—from the various members of the Society, in lieu of a long paper. Much might often be learnt by the wisest from a case from another's note book.

Mr. BRIGGS moved a hearty vote of thanks to the President, remarking that he had never heard a clearer and more lucid address than the one to which they had just listened.

Mr. MASON, in seconding, congratulated the President upon the excellence of his address.

The resolution was carried amid acclamation and suitably acknowleged.

The Walley Memorial Fund.

The PRESIDENT then brought before the meeting the question of raising a fund to perpetuate the memory of the late Professor Walley.

The Annual Dinner.

Between thirty and forty gentlemen attended; among those who sent letters of regret at inability to be present was Professor Williams. Mr. Cooke, of Scarboro' (the president for the past year) filled the chair, and the vice-chair was occupied by the new president (Mr. Clarkson).

The CHAIRMAN proposed the customary loyal toasts and in doing so made a sympathetic allusion to the death of the late Prince Henry of Battenberg.

The military toast was also submitted by the CHAIRMAN, and responded to by Captain R. W. RAYMOND, A.V.D. (of the 8th Hussars, at present stationed in Leeds) and Mr. MASON, who was formerly connected with the Army Veterinary Department, and now an officer in the Leeds Artillery Volunteers.

Mr. BRIGGS gave "The Royal College of Veterinary Surgeons," coupling therewith the name of Mr. Mason, who, he observed, had for some years represented them on the Council in a manner that merited their very warmest thanks. He had represented their views to their satisfaction. The Royal College, from its elective character, must be a body in which the veterinary medical profession as a whole had perfect trust.

Mr. MASON, in response, took the opportunity of thanking them for assisting

in placing him fifth on the poll at the last election of representatives of the Council of the Royal College. In a *resumé* of the work of the past 12 months, he said there had been no particular important matter, except the question of the Animals Department of the Board of Agriculture. A committee has been appointed to approach the President of the Board of Trade (Mr. Walter Long) as to whether he would receive a small deputation to lay the grievances of veterinary surgeons before him. He noticed that Mr. Long, through his chief secretary, had replied that he would not receive such a deputation, but that he would only receive the President and the Secretary of the Royal College of Veterinary Surgeons to talk the matter over. He (Mr. Mason) was not now a member of the Registration Committee, but he knew that the members of that body were doing their utmost to protect the profession from unscrupulous persons practising their arts—more particularly in the country districts.

"The Examiners" was given by Mr. J. CARTER (Bradford), and acknowledged by Mr. ROBINSON (Barnsley), who said it was of the greatest importance that they should have good men as examiners.

Mr. CLARKSON next submitted the toast of "The Veterinary Schools." He said he was afraid the schools, just now, were not in a very good position, for times had been exceedingly hard lately. The new rules had, it would appear, affected them somewhat seriously. Some members of the Council seemed to think that the schools should not be considered. He, however, thought they had a *locus standi*, and should be considered in the transactions of the Council. The schools represented the life-work and the intellect of a large number of the profession, and a great deal of capital. In France, the Government recognised the Veterinary medical profession as being a great help to the stock owners of the country. That was a matter which, among other questions, the Government of this country ought to consider in regard to the teaching of veterinary science. If the Government would only help them more than at present, they in return would be able to help the farmer more.

Mr. BRIGGS, in reply, joined with Mr. Mason, Mr. Clarkson, and other speakers in regretting the absence of Professor Williams, and contrasted the teaching and the school fees of the present day with what existed when he and others present were undergoing their scholastic training. They had, he said, made it that a man who wished to enter their profession must have received almost a university education. The matriculation examination now prescribed for entrance to their schools was very strict, and, indeed, any man who was able to pass that test was fit either for the medical, or legal, or even clerical profession.

Mr. G. E. BOWMAN then proposed "The Other Veterinary Medical Societies," which he regretted to say were unrepresented on this occasion. These societies were, he added, of great value to the profession.

Mr. FRANK SOMERS submitted "The Visitors," welcoming once more at their annual gathering Mr. H. A. Child, solicitor, of Leeds, and Mr. Lane.

Mr. CHILD responded in a speech largely reminiscent of his professional experiences in defending prosecutions instituted by the Royal Society for the Prevention of Cruelty to Animals. He said that, like members of the veterinary medical profession, he did not carp at, or take exception to, any society that had for its object the advantage of the public, and the prevention of cruelty to animals, but he was entitled to criticise the means which were sometimes adopted by voluntary agencies. He agreed with what had fallen from more than one judge of the land, that whenever a person in authority embarked upon an inquiry, his object should be to conduct it impartially and properly. It should be the duty of an officer, whether a policeman or the agent of a voluntary society, to obtain all the information he could get, both in regard to the accused and the accuser, and leave it to the judgment of the tribunal before whom he appeared.

Mr. LANE also responded.

Mr. GREENHALGH (Leeds) gave "The Chairman," observing that during the past year Mr. Cooke had filled the chair with great credit both to himself and the Association, while the various meetings and discussions had been very advantageous to the members.

Mr. MASON supported the proposition, also testifying to the ability displayed by the Chairman, and recalling the fact that during the year Mr. Cooke had generously invited the members of the Association to Scarborough, where he resided.

The toast was drunk with musical honours.

The CHAIRMAN briefly acknowledged the compliment, saying how heartily he thanked them for their support during the year and their kindness on this occasion. If what he had done while holding the presidency had been satisfactory to them he was highly pleased. At any time he should be happy to do anything that he could for the Association and the profession generally.

The proceedings then terminated.

ONTARIO VETERINARY ASSOCIATION.

THIS Association, which is composed of duly qualified veterinary surgeons practising in Canada and the United States, held its annual meeting in the Veterinary College, Toronto, on Dec. 21st.

Mr. G. L. Robson, V.S., the President, opened the meeting with a most excellent address, containing many points of interest and much food for thought.

After the usual routine business, the reading of the minutes of the last meeting, secretary and registrar's reports, communications, etc., a discussion ensued, relating to the Act recently passed in the Provincial Legislature respecting veterinary surgeons, and a fine having been imposed under that Act upon a person for falsely claiming the title, which fine should have been paid over to the funds of this Association.

Prof. S. Sisson, of the Ontario Veterinary College, read an excellent paper on "Undescended Testicle in the Horse."

Mr. A. Crowforth, V.S., read a very interesting paper on "Toxin and Antitoxin," in relation to the cause, cure, prevention and diagnosis of disease.

The following are the officers for the ensuing year: Professor A. Smith, F.R.C.V.S., Honorary President: Mr. H. Hopkins, V.S., President; Major Lloyd, 1st Vice-President; Mr. S. Sisson, V.S., 2nd Vice-President; Mr. Sweetapple, V.S., Secretary; Mr. W. Cowan, V.S., Treasurer.

STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

THE State Board of Veterinary Medical Examiners, of Pennsylvania, was convened at Harrisburg at 12 m., on November 13, in accordance with a call issued by the Secretary of the Commonwealth. The Board, being duly sworn into office by the Department of State, Dr. W. Horace Hoskins was made temporary chairman, and Dr. S. J. J. Harger secretary *pro tem.* All the members of the Board were present.

The first order of business being election of permanent officers, Dr. S. J. J. Harger was nominated for President by Dr. Harry Walters, and Dr. W. Horace Hoskins for Secretary by Dr. J. C. McNeil. No other names being placed, the election was made by acclamation, upon which the officers assumed their respective places.

The question of adopting suitable bye-laws for the government of the Board was taken up for consideration, and after considerable discussion on the subject, a motion was made that the chair appoint a committee of three to prepare suitable rules to be submitted to the entire Board for adoption at

the next meeting, and that they also draft a suitable form of license to be presented at the same time.

The Secretary was instructed on motion to procure a minute book and a suitable registration book.

Deputy-Secretary Burnett was then asked to inform the Board as to the intent of the act so far as placing on the seal of the State, and the Board was informed that all licenses would have to be returned to the Department of State at Harrisburg to receive there the seal of the Commonwealth.

It was also suggested to the Committee on Rules and Bye-Laws that the officers be elected annually. It was also decided that two regular meetings be held each year in the latter part of April and June, with such other meetings as the business of the Board might demand.

The subjects for examination were assigned as follows: Anatomy, Veterinary Diagnosis and Zootechnics, Dr. S. J. J. Harger; Practice of Medicine, Dr. W. Horace Hoskins; Obstetrics, Meat and Milk Inspection and Sanitary Medicine, Dr. J. W. Sallade; Surgery and Physiology, Dr. Harry Walters; Pathology, Chemistry, Materia Medica and Therapeutics, Dr. J. C. McNeil. The age of the applicants, their normal character and genuineness of their diplomas, were placed in the hands of the Secretary.

It was also decided that a list of fifteen questions on each branch would be submitted to the applicants, from which they should select ten for answering. Applicants shall draw one from a box of cards with numbers upon them, upon which he shall write his name and place the same in a sealed envelope, and shall designate his answers to the questions on the various subjects by the same number. This card shall be placed in the keeping of the Secretary. It was decided that a general average of 65 per cent. shall have been attained, and that a minimum of 50 per cent. must be attained on each branch.

It was moved and seconded that the April meeting shall convene for two days. It was decided that the first regular meeting of the Board for examination of applicants for license shall convene on the third Monday in December at the office of the Secretary, 3452 Ludlow Street, Philadelphia, Pa., and that notices of the same be sent to the veterinary journals of North America.

The Chairman then appointed the following Committee on Rules and Bye-Laws: Dr. W. Horace Hoskins, Chairman; Dr. J. W. Sallade and Dr. Harry Walters, after which a motion to adjourn prevailed.

W. Horace Hoskins, *Secretary*.

CONTAGIOUS DISEASES ANIMALS ACT, 1894.

Summary of Returns, for the four weeks ending February 15th, 1896.

England and Wales.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders including Farcy.	Rabies.	Foot-and-Mouth Disease.
None	*Slaughtered.* As diseased, or having been exposed to infection 5224	Animals attacked 50	Outbreaks 60 Horses affected 102	Dogs reported 57 Other animals ... 1 Destroyed, as having been exposed to infection 23	None

London, 44 outbreaks of glanders; 72 cases.

SCOTLAND.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders, including Farcy.	Rabies.	Foot and-Mouth Disease.
None	*Slaughtered.* As diseased, or having been exposed to infection 953	Animals attacked 25	Outbreak 1 Horses affected 11	No cases reported	None.

IRELAND.

None	*Slaughtered.* As diseased, or having been exposed to infection 238	No cases reported	Outbreak 1 Animals affected 1	Dogs reported 51 Other animals ... 13 Dogs, destroyed as having been exposed to infection 79	None

Parliamentary Intelligence.

DISEASES OF ANIMALS BILL.

Mr. LONG asked leave to bring in a bill to amend the Diseases of Animals Act, 1894. He said that the bill consisted only of two clauses, one of which gave the power sought, and the other consisted of the title. Although the bill proposed to amend the law, it did not propose to make any change in the state of things as existing at present. Under the Diseases of Animals Act power was given to the Board of Agriculture to protect the country against the danger of disease by the issue of certain regulations so long as the Board had reason to believe that there was just cause to fear infection. The proposal which he now made to the House was to remove altogether that discretion from the Board, and to make the restrictions upon the import of cattle from other countries permanent, and therefore to put an end altogether to the power of any Minister to abolish the regulations, and admit the cattle. An overwhelming majority of the agriculturists in this country had declared times out of number that, owing to a want of confidence on their part, they had been unable to develop the production of cattle. They asserted that owing to the fact that it was within the power of the Minister of the day to remove the restrictions they were unwilling to embark their capital and skill in an industry which required time for the realisation of profits, and which might at any moment be destroyed if, by the removal of the restrictions, disease was suddenly again to spread throughout the land. The evidence of this feeling was to be found in the fact that a very large deputation had waited on his predecessor in office and urged the need of permanent restrictions. His predecessor had found himself unable to comply, but he adhered fearlessly to the course of restriction which had before that been adopted. He (Mr. Long) recently received a similar deputation, representing 63 societies, including the Central Chamber of Agriculture, the Royal

Agricultural Society, the Smithfield Club, the Farmers' Club, the Highland and Agricultural Society, the National Agricultural Union, the Shorthorn Society, the West of England Agricultural Society, the National Sheep Breeders' Association, and the National Pig Breeders' Association. That influential deputation urged that the responsibility of making and maintaining restrictions should not be thrown on a Government Department, but that the Legislature should, once for all, lay down the principle that all cattle should, except under very special conditions, be slaughtered either before shipment or at the port of debarkation. It was to give effect to that view that he was asking the House to assent to the introduction of this bill. Regarding pleuro-pneumonia, it was most difficult of detection, and it might long lie latent, and the same difficulty of detection existed with the disease of sheep scab. At a time when everything was looking most satisfactory, a sudden arrival in this country of cattle affected with disease might bring in its train not only fearful inconvenience, but almost ruin for many of the stockowners and breeders. In face of this possibility it was not reasonable to expect that men should spend their capital and skill on the development of cattle-breeding. It had been contended in some quarters that this was a protective measure in the sense that it was an attempt to protect cattle owners from unfair competition. If by saying "hear, hear," hon. gentlemen meant to give their assent to that proposition, he suggested that they had not made a sufficient examination of the subject. If they meant that by some legislative measure an additional or artificial value would be given to the home product by the exclusion of the product from other countries, they were entirely wrong, because whatever the effect of measures like this might be, it certainly had not the effect of raising prices. If they would examine the facts with regard to the effect upon the prices of meat by these restrictions, they would find that whether it was caused by the introduction of foreign dead meat, or whatever the reason might be, certainly the price of live beasts or dead meat had not gone up since the restrictions had been imposed. The disease with which they had most to contend was pneumonia, and the House would appreciate that at this moment we were immeasurably better than we were in 1890, owing to the maintenance of these strict regulations. In that year the disease existed in twenty counties, and the number of affected districts was 119, while 521 cattle were destroyed, whereas in 1895 the disease existed in only one county; there was only one outbreak, which was treated by the owner himself. That showed that the imposition of the restrictions had been of enormous benefit to this country and its cattle owners. He had been told that this was an argument for continuing the present state of things. In whose interests was it that the present state of things should be maintained? Was it in the interests of the graziers in this country, or in those of the ports who received the cattle, or in those of the people who exported them? So far as other countries were concerned, whether it were the United States or our Colonies, this country had no desire whatever for legislation to interfere with their trade with us. The bill proposed to make the restrictions which had been in force permanent. The right hon. gentleman then quoted figures to show that whereas in 1880, 154,800 cattle were imported from the United States, in 1895 the number was 273,000, showing that the restrictions, while they secured the breeder and grower at home from disease, did not interfere with the importation of beasts for slaughter or in the trade in dead meat. He was quite confident there was no agricultural industry which was capable of such development as this provision of store stock. It would be urged by the hon. member for Aberdeenshire that this measure would act with harshness upon a part of Scotland. That was one of the difficulties in connection with the administration of agricultural affairs. The industry was so different in its character in different parts of the country, that it was impossible to hope that any measure which

he might propose would apply with equal satisfaction to agriculturists in all quarters. He thought he was justified in appealing to the hon. gentleman who represented that part of Scotland—after all it was only part of Scotland. He also appealed to hon. gentlemen representing the eastern portions of England. They were after all in a very small minority. The vast majority of the people in this country were interested in the protection of flocks and herds from disease or any risk of disease. He could not conceive the moment arriving when the Minister responsible for agriculture would be able to remove those restrictions under any condition of things which he could conceive was ever likely to exist in this country. The risk of the agriculturists was so great, and the advantage to be obtained in comparison so small, that he was confident that if the Minister were to strain his responsibility in any direction, it would be in the direction of protecting the flocks and herds of the country. He believed that the United Kingdom could well supply the requirements of the graziers of this country if it had the opportunity. And in regard to the question of stores, they were applying themselves to that at the present moment. The demand for the safeguards which the bill gave was made by the majority of farmers in all parts of the United Kingdom. The Government believed that the demand was no greater than the circumstances of the case justified. He did not pretend that the bill, if it was passed, would restore agricultural prosperity, but he respectfully and sincerely assured the House that this was one of the ways in which they could do something for the agricultural interests of the United Kingdom.

Dr. FARQUHARSON said he did not oppose the introduction of the Bill, but he would point out that, with the great increase in the cattle-breeding industry, there was great difficulty of obtaining sufficient stores to meet the necessary wants. A very satisfactory supply was obtained from Ireland, but it fell short of the supply which was undoubtedly required. He did not think the right hon. gentleman had made out his case for the other sweeping proposal of the present Bill. At least he did not think, in view of the very small amount of disease which now existed in this country, that there was any demand at present for the measure. The right hon. gentleman, with the powers at his disposal, was, like his predecessors in office, doing very well, and was quite able to give to the farmer all the protection he required without any of the unpleasant savour of protection which these new proposals suggested.

Mr. LLEWELLYN said that the hon. member who had just spoken represented a constituency many of whose members made a very good living by the fattening of cattle, and there were also breeders in the east of England who shared their opinions. But there was a far more important branch of the agricultural industry—viz., the dairy-produce branch, and no one who had seen the harm which had been wrought by the introduction of disease into the dairy-farming stocks could deny the necessity for some measure for effectually dealing with the matter. It would pay the dairy-farmers much better to destroy the entire herd when foot-and-mouth disease broke out than to keep them through this terrible scourge, for it meant not only loss of milk, but the ruin of every kind of cattle in the yard. A recurrence of what took place in 1872 and 1875 and the dairy-farmers in the west of England would be absolutely ruined, and it was because the Bill would go far to prevent any outbreak of the disease that he heartily supported it.

Dr. TANNER hoped that the House would take care to prevent anything being introduced into the bill in the nature of protection, which, however valuable it might be for the rich, was absolutely against the interests of the poor.

Colonel LOCKWOOD thought that if every measure in the interests of the agriculturist was to be put on one side because of the fear of protection being introduced, the farmer would find himself in a difficult plight. The bill was

merely an act of justice, and such a one as he should have expected from the right hon. gentleman, the Minister for Agriculture.

Mr. JEFFREYS thought the bill would do a great good to agriculturists.

Lieut. General LAURIE said the feeling in Canada was that the British Government had not treated them well, because they maintained that they never had had cattle disease in Canada. They also maintained that the prohibiting of the importation of live Canadian cattle was a policy of protection to the British farmer. The Government were doing a good turn to the people of Canada by teaching them that they must fatten their cattle.

Leave was then given to bring in the bill, and it was read a first time. The second reading was put down for Monday.

A CASE OF TETANUS CURED WITH ANTITOXIN.

BY GEO. JOBSON, V.S., OIL CITY, PA.

THE curative treatment by means of antitoxin, although as yet confined to a limited number of diseases, opens a field whose limits we cannot yet define, and many diseases which are now looked upon as fatal, may in the near future be cured by this form of treatment. The discovery of tetanus antitoxin is one of the most recent and valuable additions to the list, and it is the only known remedy at present that can be relied upon to cure this generally fatal disease.

That tetanus occurs spontaneously has very few supporters at present, as it is necessary to have the presence of the toxin or poison before the disease is produced, and the germs which produce it may gain entrance to the system by the slightest kind of a wound.

The case about to be described is not cited simply because the animal recovered, as I have had several cases recover by medicinal treatment alone; but because the effects of the material were almost immediate, while by the old methods it required months sometimes to produce the same results.

Case.—A chestnut pony gelding, used in a grocery wagon, received a wound in the neck from a rusty nail sticking out of a board in the stall. In about nine days afterwards the man in charge noticed a slight stiffness during locomotion, but it was not thought serious, and the animal was kept at work until the next day, when he was brought to the office, and a diagnosis of incipient tetanus was made, and it was advised to have the animal unhitched and removed to his stall.

Nerve sedatives and anti-spasmodics were given, but the animal grew steadily worse, and on November 3rd, it was a well-marked cases of tetanus. The muscles of the trunk and limbs were now stiff, but trismus had not as yet occurred, and with assistance the animal was able to rise when down.

Having read an article by Paul Gibier, M.D., Director of the New York Pasteur Institute, on the treatment of this disease in man by the use of antitoxin, and to whom I am indebted for some of the above statements, I suggested to the owner that we send to the institute for a sufficient quantity of antitoxin to give it a fair trial, if it did not cost too much, and he consented. Before the arrival of the antitoxin, on the morning of November 7th, the horse was found lying in the stall unable to rise. Slings were put under him and on being raised to his feet was unable to stand. The entire muscular system was stiff and the jaws locked. Respiration was rapid and conducted with much difficulty. The slightest disturbance would bring on spasms, and it looked doubtful if the horse would live any length of time.

On November 9th a supply of antitoxin sufficient for three injections was received from the institute, and at 4.15 p.m., assisted by my father, the first injection was made. The hair being first shaved from portions of the neck, the parts were washed with a solution of carbolic acid, and the antitoxin in

solution was injected hypodermically. Immediately before the injection the pulse was 44, temperature 100⅗° F., and respiration 72. The wound was washed with iodide, 1 ; potassium iodide, 2; and water, 100 parts. When the second injection was given next morning, the respirations had dropped to 55, pulse 40, and the temperature had risen to 101⅗° F. Improvement in the condition of the muscles of the body and limbs were general, while the muscles of the jaws were decidedly improved. The neck being moved from side to side, instead of being held in a straight line, as previously.

On November 11th the third injection was made, and a further improvement was visible ; the respirations being 52, pulse 40, and temperature 100$_2$° The muscles of the jaws could be freely used in masticating. Improvement continued steadily until six days after, when he was taken out of the slings and walked around the yard. Recovery is now complete and the horse is doing his regular work.

STRANGE DEATH IN NEWCASTLE.

Mr. Theodore Hoyle and a jury, sitting at the Newcastle Infirmary on Feb. 20th, inquired into the case of George Gibson Johnson, aged 36, who died there on Tuesday morning.

Mrs. Ellen Johnson said her husband had been engaged as a cartman with Mr. Thompson, farmer, of Winchester, near Wylam. He was always temperate in his habits, and had enjoyed good health up to about a year ago. Then he had influenza, and was at home a week, and returned to his work. While he was in the house ill he told her that he had been bitten by the horse he drove, but he did not take any notice of it. He showed her a scar on his arm where he said the animal had bit him, and, when this was squeezed, matter came from it. Deceased only worked for another week, and then came home again, complaining of a bad throat. He returned on the Saturday, and on Monday Dr. Slater was called in. In a few days her husband broke out in a rash on his face, and it soon extended all over his body. A lot of doctors were brought to examine him, and one—she did not know who—said the disease looked rather like glanders. After that Dr. Armstrong, the medical officer of health, got Mr. Stevenson, veterinary surgeon, to examine the horse. He certified that the animal was suffering from glanders, and it was destroyed. Witness added that the owner (Mr. Thompson) also had the horse examined by Mr. Gillespie, another veterinary surgeon, and he said there was nothing the matter with it. After three weeks her husband was removed to the Walker Hospital, where he staid 13 weeks, and came out a good deal better. He was at home for a week again, and then his throat once more got worse, and Dr. Slater advised him to go to the country. Accordingly he went to stay with some friends at Wooler in July, and remained till about the beginning of last December, when he returned, at that time so weak that he could neither walk nor feed himself. He stayed at home from Tuesday till Saturday, and was then ordered to the Infirmary. Witness knew the horse. It seemed to have a cold, but she did not notice anything particular. Her husband said it had been running at the nose. Diseased suffered very much with his throat, and he had a discharge from there.

Dr. Davidson, jun., house physician, said deceased was admitted on Dec. 7th, and was then emaciated and in a bad condition generally. He described the symptoms, and said that deceased went on all right for a time, and then tumours formed in his mouth and he had bronchitis, which became affected by the violent discharge from the mouth, and he got inflammation of the lungs, from which he died. At the post-mortem examination, held in conjunction with two other doctors, they found no certain signs of glanders. They could not decide positively, however, until a microscopical examination had been

made, and they had sent specimens of the matter to be prepared for that purpose. The ulceration in the throat which ultimately caused the inflammation of the lungs might have been caused by glanders or something else; but at present he was unable to give a definite opinion.

The jury returned a verdict to the effect that death was due to inflammation of the lungs, but what gave rise to it there was no evidence to show.

Reviews.

ILLUSTRATED HORSE BREAKING. By CAPTAIN M. HORACE HAYES, F.R.C.V.S. (W. Thacker & Co., London and Calcutta.)

The accomplished author, in this the second edition of the work, has so much enlarged and re-written it, as to render the work almost a new one. As an exposition on the art of Horse Breaking, it is far and away the best that has ever been published. Although it is not given to every horseman to have the nerve and physique (so amply possessed by the author), requisite to handle unbroken horses, he shows that by adapting his clever manual methods

of breaking horses to their psychological limitations and peculiarities much and ready success can be obtained. Indeed, by means of the intensity, as he terms it, of his methods he claims to be able, no matter how wild and "green" a horse may be, to "mouth" and make him a good saddle-horse in three weeks' time.

The work is divided into 13 chapters, the first two, comprising 63 pages, dealing with the mental qualities of the horse and the theory of horse-control. These topics are well thought out, tersely and clearly expressed, and are moreover extremely interesting, were it only from a scientific point of view. The other chapters give practical details of his system of horse breaking, and are beautifully illustrated by photographs and woodcuts. The

concluding chapters relate to the training of horses for all purposes, after they have been broken.

The parts in the book which ought to specially interest veterinary readers are chapters I. and II., which treat on equine psychology, and chapter IV., which deals with horse control. As instances of the care in representation and attention to detail displayed, we give Figs. 1 and 2 to illustrate the wrong and right way of holding a horse's foot up. In Fig. 3 the veterinarian will see that in the canter and gallop, the weight of the horse and rider is borne during a period of each stride by the leading fore-leg, which is consequently more liable to suffer from sprain and concussion than its fellow.

The work throughout teems with original information and ideas, and others derived from the best sources, regarding the handling of horses, broken and unbroken, which are valuable to horsemen, however experienced. It possesses a distinct educational value for students and others interested in the equine species, as the former in their eager pursuit of scientific knowledge are apt to underrate or neglect the importance of the practical. The book is got up in excellent style. The knowledge of his subject displayed by the author is varied and profound, and the literary merit of the book is to be commended. Altogether, it is one well worthy of a place in the library of every owner of horses.

We have read with much interest Mr. E. D. Miller's book on "Modern Polo." (W. Thacker & Co.) It is well written and the advice and instruction thoroughly sound, as one would expect, coming from the pen of such a master of the game. Great credit is also due to his editor, Captain Hayes, who has the book beautifully illustrated and added to, by a useful chapter on "Veterinary Advice to Polo Players." It is wonderful what a hold polo has taken in this country; not only every cavalry regiment, but many large towns boast of a polo club, and the old-fashioned prejudice about the cruelty of the game is

now seldom heard, and reasonably so, for every unprejudiced onlooker must observe what excitement and pleasure an old polo-pony gets from the game, and a beginner on such an one finds himself perfectly astonished how continually he is in the thick of the game without any assistance on his part; in fact, he is generally abused for being too much there. Mr. Miller not only gives excellent advice to beginners but places the game before us on a thoroughly scientific and practical basis. His advice on the selection of a pony is very sound, and we thoroughly agree with him where he recommends every intending purchaser to ride the pony himself before deciding; for five minutes on its back will teach him more than walking round it for half an hour. As regards soundness, of course, a young pony should never be purchased for polo with a screw loose; but it is perfectly marvellous how an old one, apparently quite broken down, comes out year after year and plays through the season with hardly a day off. Still we do not think the advice to get a veterinary certificate and then judge for yourself is quite correct; far better, if you want a professional opinion, to have the pony examined in your presence and discuss the pros and cons then and there with your veterinary surgeon

and abide by his decision. He can and will tell you much more than he can write on a certificate and it is to your mutual advantage. Mr. Miller gives good advice on shoeing, bitting and saddles, amongst many other things; and as regards the latter we are quite of his opinion that a 12lb. saddle is small enough for the average player. There is a strong tendency, especially among cavalry men, to use the lightest saddle possible, with the natural result of a maximum of discomfort both to the pony and player, not to mention many a sore back. His advice on wintering ponies is certainly sound, also the manner of bringing them into work again, and there are two excellent chapers on the "various breeds of polo ponies" and "polo pony breeding," the former being beautifully illustrated (particularly two English ponies, 25 and 46, and an Arab, 51 and a Syrian Arab, 53). Mr. Miller writes on Indian polo with the same knowledge and freedom as of the home game, having had considerable experience of it in that country, and he, like many other authorities in India, swears by the Arab. Polo players will find this book full of most valuable information (including, of course, the rules of the game up to date), and a careful study of it will well repay even old experienced hands.—A.

Army Veterinary Department.

THE Queen has been graciously pleased to give orders for the following appointment to the Distinguished Service Order, in recognition of the services of the following officers during the operations of the Chitral Relief Force :—

To be Companion of the Distinguished Service Order—Vet.-Lieut.-Col. G. A. Oliphant, F.R.C.V.S., is placed on Retired Pay, dated 26th January, 1896.

The undermentioned Veterinary-Majors to be Veterinary Lieut.-Colonels:—

J. Kettle, vice W. A. Russell, F.R.C.V.S., retired, dated 6th January, 1896;

J. C. Berne, vice G. A. Oliphant, F.R.C.V.S., dated 26th January, 1896.—*The London Gazette.*

Appointments and Movements.

Veterinary-Lieut.-Colonel J. Kettle has been appointed District Veterinary Officer, Woolwich.

Veterinary-Lieut.-Colonel J. C. Berne has been appointed to the War Office for duty in the office of the Director General, Army Veterinary Department.

Veterinary-Lieutenant T. W. Rudd has been transferred from Aldershot to Athlone.

Veterinary-Lieutenant J. D. E. Holmes from Aldershot to Woolwich.

Extract from *London Gazette*, dated 11th February, 1896 :—

Veterinary-Captain George F. Davis to be Veterinary-Major. Dated 9th February, 1896.

Arrivals.—Veterinary-Lieutenant A. C. Newsom, having arrived from India on 1st inst., is posted to Woolwich for duty.

At the Levee held on the 13th February, at Dublin Castle, by Earl Cadogan, Lord Lieutenant of Ireland, the following officers of the Army Veterinary Department attended :—

Veterinary-Lieut.-Colonel C. Clayton, presented by Field-Marshal the Right Hon. F. S. Roberts, V.C., G.C.B. ;

Veterinary-Majors—J. Reilly, and J. Matthews, F.R.C.V.S., F.R.G.S. ;

Veterinary-Captains—C. E. Nuthall, J. A. Meredith, F.R.C.V.S., and A. J. Haslam, M.D., F.R.C.V.S.

"RELIANCE" CASTRATOR.

(PATENTED).

A NEW form of instrument for castrating has been patented, which is very simple, and possesses many advantages over all existing castrators.

It has longitudinal grooves deeply cut, both on the upper and lower blades, which when closed fit accurately into each other, thereby squeezing the cord sufficiently to prevent hæmorrhage.

The upper and lower blades are curved, the former having a series of small sharp teeth, so that when in the act of closing the instrument, by means of these teeth it is impossible for the cord to slip, and it is cleanly cut and damped with the one action ; it also has a very simple arrangement, whereby you can obtain parallel pressure throughout the whole length of the blades, this being a great advantage over all the instruments at present in use.

The upper blade having teeth will not blunt like the ordinary instruments.

It is nickel plated and fitted with a thumb screw, so that it can be taken to pieces for cleaning purposes. It has been patented and practically tested and proved to be the most simple and effective instrument as yet brought before the notice of the profession.

The patentees and manufacturers are Messrs. Arnold and Sons, of West Smithfield. London. Price, nickel plated, 38s. 6d.—*Communicated.*

Correspondence.

SOUTH AFRICAN HORSE-SICKNESS.

Colonial Bacteriological Institute,
Grahamstown, South Africa,
January 28th, 1896.

To the Editor of THE VETERINARY JOURNAL.

SIR,—In the January number of THE VETERINARY JOURNAL, there appears a paper by M. H. Hayes, F.R.C.V.S., on the above subject.

Captain Hayes has honoured me in abstracting large portions of my reports which have been sent to him by his special request. But in the paper under question, I would point out that an original remark made by him is not only erroneous but misleading, as regards the pathology of this interesting disease. I gave to this disease the name of Œdema mycosis in deference to the principal pathological feature, and in virtue of the fact that true inflammatory phenomena are conspicuously absent. Captain Hayes, in referring to the varieties, says :—"It is generally considered that there are three varieties, namely (I.) the lung form (Dutch : *paard zickte*), which is the common kind, and which we might term *specific equine pleuro-pneumonia.*" Now, sir, if there is one name which may not be used for this form, the one suggested by Captain Hayes is most assuredly so, for in this form inflammation is quite as much wanting as in any other. It might be termed specific pulmonary œdema, but as the local condition is only part of a general systemic condition, even this would be misleading. Should any of your readers be interested, I shall have much pleasure in sending a copy of my reports to them if they will kindly notify me to that effect.— I have the honour to be, Sir, faithfully yours,

ALEXANDER EDINGTON, M.B., F.R.S.E.,
Director.

To the Editor of THE VETERINARY JOURNAL.

Sandy Brow, Tarporley.
February 18th, 1896.

FRIEDBERGER AND FRÖHNER'S "PATHOLOGY."

SIR,—As an American translation of Friedberger and Fröhner's *Lehrbuch der speciellen Pathologie und Therapie der Hausthiere* has been offered on sale in England, I have the honour to inform you that the German publisher, Herr Ferdinand Euke, of Stuttgart, tells me that this American translation is unauthorised by him and is consequently a literary piracy, which he has taken measures to suppress in England. I regret to say that the American translator has made use, in his circular, of favourable opinions by English (and Scotch) veterinary surgeons, who probably would have been more careful in expressing their praise (and gratitude ?), had they been aware of the circumstances under which this illegal attempt to sell the American piracy had been made.

So far from this prohibition of the sale of the American translation of this most valuable work on veterinary medicine being a hardship to those English veterinary surgeons who are unacquainted with more languages than one, it will really be a boon ; because I have purchased from Herr Euke the right of translating the said work into English ; this purchase securing for my future readers the following advantages :

(1) My translation will be of the fourth and improved edition, which, Herr Euke tells me, will be ready early next month (March), and of which he is sending me the advance sheets.

(2) I shall furnish a commentary on the text, somewhat similar in method to the notes Cadiot, Reis, and Trasbot added to the French translation. Even if my annotations be not more valuable than those of the American translator, I shall have the undeniable advantage of help from several English veterinary surgeons, who have kindly promised to collaborate with me.

(3) The cost of the American translation was £2 10s. My translation will not be more than half that amount, and will therefore be well in reach of ordinary practitioners and students.

Your obedient servant,
M. H. HAYES, F.R.C.V.S.

Berwick-on-Tweed,
February, 1896.

On the 25th ult., I attended a Kerry cow which could not calve. She was from her size expected to have twins, but a great quantity of fluid had come away and now she was quite flat, but rather pendulous. She was two weeks over her time. Very little show of milk, very little relaxation of pelvic ligaments or enlargement of vulva. With some pressure I got hand and arm inserted, giving plenty of time and manipulation to enlarge and relax the pelvis and vagina.

As soon as I felt the calf sufficiently to determine its condition, I said it was deformed. The shepherd who was standing beside me, immediately told me that two other Kerries had cast calf and they were both malformations and both the same, and he described them, the description being identical with the case in utero; and now, February 12th, I have a note saying another of the Kerries has had a deformed calf similar to the previous ones; she calved it naturally.

In the case I had to do with, the round bullet head stuck fast in the vagina, so I had to divide the cranium longitudinally and let it collapse into less bulk. The cow died the third day.

I understand there is some relationship between the cows and the bull they were served with. I also understand that in some sheep stocks where in-breeding is practised, there are deformed lambs to a greater extent than ordinary. It would be interesting to know if there are other records or knowledge of similar cases to this in other pure-bred bovine herds.

It belonged to the class of Symelian monstrosities, where from absence of some parts and fusion of others a creature was developed, having in this case a head big, out of all proportion to the size of the trunk. Limbs short as fins, the posterior ones appearing to grow out from the back. Yours, etc.,

JOHN CAMERON.

OWING to pressure on our space, we are compelled to hold over "Extracts from Foreign Journals," etc., until the next issue.

Communications, Books, Journals, etc., Received.

Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); Bulletin de la Societe Centrale de Medicine Veterinaire (4me trimestre 1895: Paris); Le Bulletin Veterinaire (Orleans); L'Echo Vétérinaire (Liége); Annales de Médecine Vétérinaire (Brussels); Berliner Thierärztliche Wochenschrift (Berlin: Richard Schoetz); Oesterreichische Monatsschrift für Thierheilkunde (Vienna: M. Perles); La Revista Veterinaria (Buenos Aires); La Revista Agronomica (La Plata); La Clinica Veterinaria (Milan); Il Nuovo Ercolani (Pisa).

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

APRIL, 1896.

ESSAY ON "IMMUNITY."*

BY "ECRIVAIN."

MR. CHAIRMAN AND GENTLEMEN,—The subject which I have chosen for my essay this evening is immunity, and a more important doctrine in its bearing on the health and welfare of mankind, and the domesticated animals, has never been given to the world. Every day new facts come out, which could not be done but by the disturbance and exercise of both the practical and scientific mind. Many do not believe much in immunity, but when we look back and study the number of lives, both of animals and of men, that have been saved by the production of immunity, we cannot take such erroneous views. We must not, however, be too free in a subject of this kind, for yet many weighty reasons have to be investigated and confirmed; still if the progress is carried out to the extent as in late years, there may come a time in future years when most, if not all, of the contagious diseases will to a certain extent become eradicated. At the present time, however, we may reasonably say that already sufficient groundwork has been procured to inspire us with boundless hope. Let us, therefore, consider for a short time the many theories advanced on the subjects; the ways by which immunity is given, and the most important diseases against which it can be given, and also its varieties.

Definition.—Immunity is the protected condition of the body, naturally or artificially produced against the injurious effects of some of the virulent contagia. Immunity may be divided into three kinds, namely:—(1) Natural; (2) Inherited; and (3) Acquired; and it is to the latter that I will mostly confine my paper, yet I could not pass by the other two without a brief description.

* Read before the Edinburgh Veterinary Medical Society.

Inherited immunity implies that the immunity is handed down from parent to offspring. For example, if we inoculate Algerian sheep with a cultivation of anthrax during pregnancy, their lambs are brought forward as usual, and are strongly immune against anthrax. Again, no negro is liable to yellow fever, and this can be accounted for by the fact that only those who can resist the disease will live to have children, and consequently the immunity is handed down, and perhaps strengthened by the union of those immune.

Natural immunity may be had example of in field mice, which are refractory against the bacillus of septicæmia, while on the other hand it is so fatal to house mice. Again white mice are not affected by diphtheria, nor do fowls contract tetanus. This natural form is also characteristic of certain species, for we never see rinderpest attacking the horse, or glanders attacking cattle. This natural form may also be seen in susceptible species, for in many cases we see some of our domesticated animals in the very midst of contagia, yet don't contract the disease, and although this may be so in some cases, yet in others it will come under the headings of inherited or acquired. Natural immunity may not be perfect in every case, and for an illustration of this we may take anthrax in sheep. We know that sheep in this country are easily inoculated, and cause the death of the animal, yet if we inoculate Algerian sheep, they are killed only by very large doses, and sometimes not then. By whatever way natural immunity is given, it cannot be transfused by inoculation.

Acquired immunity is illustrated by protection afforded by one attack of the disease, or by inoculation against subsequent attacks. We all know that micro-organisms of disease are quite harmless in the system, provided that system be protected. Thus the convalescent from diphtheria have living organisms in their mouths often for weeks, but are unaffected by them; and again, persons who have had cholera may pass the organisms in a state of activity and virulence by the bowels, and yet to all appearance be quite well; nevertheless, these cases are a grave source of infection. Acclimatisation has also to do in some cases with immunity, for in tropical countries the animals and human beings are less susceptible to the diseases of their own country. Civilisation also bears towards it, and for this reason we see rabies much more virulent in wolves and wild dogs than in our domesticated dogs at the present time. I do not mean that on one attack of a certain disease, or rendered immune

by direct inoculation protects the system from the invasion of any virus, but simply to the one causing the disease, or that in relation to the one inoculated, and this may be for a considerable time or for a short period only. In cattle or sheep recovered from anthrax, or have been rendered immune by inoculation, they never have the disease again; but a horse may have anthrax over and over again, perhaps, in a mild form, although immunity may have been conferred for a short period only. Now, in bringing about disease by inoculation, many things favour the development, while others act antagonistic to it, of which one or two might be here mentioned:

(1) Age appears to exert some influence on the susceptibility of inoculation, for we see that young animals are, as a rule, more easily affected than the senile.

(2) The dose of the virus is also a very important consideration in the production of immunity. Let the attack of a disease be as severe or as slight as possible, it does not influence the degree of immunity acquired by the animal, but suppose we inoculate, say, ten Algerian sheep with a virus increasing in strength or quantity from the first to the last, all stages of immunity can be obtained until the dose becomes too severe, when death is the result; that is, with anthrax virus.

(3) The temperature of the animal is also a condition which renders the inoculation favourable or unfavourable, and this is, no doubt, one reason why certain diseases are confined to certain species. Rinderpest, for instance, never attacks horses, but seems to be confined to the bovine family, although it can be produced in the sheep and deer. For another example, take the fowl, with a temperature of 107·3° F, is exempt from anthrax, until it has been cooled down by pulling off the feathers and plunging it into water at a low temperature. Now this, as regards temperature, brings forward a theory in medicine which, I have no doubt, will have struck many minds, namely, the giving of febrifuge medicines during infective fevers—in fact, treating symptoms. When we consider it our duty to assist nature in every case (and this is one of nature's attempts to rid the system of injurious material), why do we run the antagonistic course?

(4) The ptomaines in many cases seem to act antagonistic to the organisms from which they are produced. In putrefying muscles the aromatic substance excreted by the microbes exert a deadly influence on their own existence. If, however, some of these microbes be taken and introduced into a suitable medium for their growth, they will again

become strong until they have excreted sufficient poison to interrupt their further development. Whatever the composition of this anti-parasitic may be, has not been fully determined, but in putrefaction carbolic acid, together with skatol and indol are some of the products. Many chemical substances given in specific diseases are said to have a depressing action on the microbes, but cannot be given in sufficient quantities to stop the development of disease. Quinine is a good example, retarding the growth of the bacillus anthracis in solution of one to eight hundred and thirty, and completely prevents it when in solution of one to six hundred and twenty-five.

Leaving these influences aside, we come to the question, "What gives immunity?" and upon this many hypotheses have been advanced, and much anxiety expressed, and still at the present day it remains somewhat dull.

Klebs and Pasteur explained that in the course of the first attack of a disease (specific), some material essential to the life of the microbes became used up, so that no longer could the organism exist in the system. If this was correct why could not the substance be found in the blood by analysis, and one would be inclined to opine that if it existed in small quantities as it was supposed, it would have been soon used up before many microbes thoroughly invaded the body, and further, what would prevent the material being returned to the blood.

Next came Chauveau's theory, that the microbes excreted materials which set against their own development, and that these ptomaines or whatever they might be, remained in the body for a considerable period. Here again comes the question: How could any liquid material unnatural to the body remain for a long period, when we know that nature attempts to expel any material abnormal, and one would assume that during the first attack, these ptomaines would soon overcome the microbes, and thus prevent the death of the animal, which is nearly always certain among the susceptible, at least in most specific diseases.

Then Grawitz suggested that any battle between cells of the body and the microbes, educated the former during the contest, increasing their vital energy and assimilating powers, and rendering them more able to overcome the next invasion.

Then came Metschnikoff's theory, which is gaining rapid strides towards the production of immunity. He says "that the protection of invasion is due to the action of the amœboid

cells of the body : that these are living masses of protoplasm and can ingest inert or injurious organisms, digest them, cast out their effete materials, and thus protect the system from invasion."

Whatever of these ways immunity occurs, we must have some power of resistance developed in or by the cells of the body in order to resist the specific bacterial activities and their poisonous products.

During the last few years great stress has been laid upon the fact that the bodily humours possess great bactericidal properties, and many observers have shown that the blood plasma, defibrinated blood, blood serum, blood as a whole, or the aqueous humour of the eye, and other fluids and exudations of the body, act against many microbes, even killing them in greater or less numbers, and sometimes in a short space of time. From these experiments, an endeavour has been made to find out some elucidation of the phenomena of immunity. By a careful study, however, it has been found out that no relation whatever exists between the two. Thus it often happens that no bactericidal properties of the fluids mentioned is more pronounced in susceptible animals, more so than in refractory. For example, if the bacillus of anthrax be introduced into the humours of a susceptible rabbit it is found that the bactericidal property is much greater than in a refractory dog, and Behring and Nissen have shown as against the bacteria of pneumonia, diphtheria, and anthrax, the antizomotic action exists to the same degree in the fluids of animals of the same species, whether they be susceptible or have been rendered immune.

In other times, again, blood drawn from the body has more pronounced antizomotic influences than in the body ; for in some cases a little blood drawn from the system would kill a mass of bacteria greater than that, which, if injected into the circulation, would, in all probability, produce death. So important as the action may be outside the body, yet it has no connection with what occurs in the immunised animal. Now comes the question, "What causes these tissue fluids to exert such an influence ?" and I think the following will explain it. Death of bacteria transported into organic fluids is no doubt due to the sudden change in medium, and that in passing from one medium to another, by successive slight modifications of growth, it is easy to make bacteria to live and even grow, which, when the change of the environment has been abrupt, swiftly leads to their destruction. It has been further stated that certain bacteria, if cultivated in blood or serum of

an immunised animal, becomes attenuated, and no longer produces a fatal disease. The bacillus of anthrax, grown in blood of vaccinated sheep, no longer kills rabbits, and the streptococcus of erysipelas, grown in the blood of immunised rabbits, only produces slight disturbances in susceptible animals of the same species; but here again we are dealing with fluids withdrawn from the body and modified in various ways. If this destruction of bacteria outside the body was due to some specific action on the fluids, one would naturally expect to find the same in the circulating blood; but such is not the case. Suppose we inoculate a refractory rabbit with the anthrax virus, such bacilli as are not destroyed maintain their virulence for a sufficiently long time, and it is possible to kill eight days after inoculation into the anterior chamber of the eye with a drop of exudation taken from the seat of inoculation in the rabbit, and kill a guinea-pig in about three hours. Therefore the period of so long duration within the refractory animal of the organisms, has not taken from them their virulence, although twenty-four hours is enough to completely attenuate the bacilli cultivated in the removed blood of a refractory sheep.

Years ago it was established that the immunised system, instead of being an unfavourable soil for the preservation of the virulence, tends rather to reinforce the property. To exalt the virus already attenuated one always employs not animals susceptible, but those slightly so, or, in many circumstances, those immune. By this method the bacillus anthracis in its most virulent form has been obtained by passing through fowls, also by passing through dogs, both of these animals of which we know are but slightly susceptible to anthrax. Again, the virulence of chicken-cholera was gained by passing through the vaccinated male bird.

I have previously spoken of the protection of the animal body by the bacteria and their products against the diseases to which they themselves gave rise, and we must see how this protective action is brought about. Acquired immunity, as I have said, is not only given by a previous attack, but also by inoculation, and before this immunity can be given without causing a fatal termination there must in some cases be a change in the virus, or, in other words, become attenuated. The virus of anthrax, if cultivated for several generations in the aqueous humour removed from the eye of an ox, modifies its virulence, that it no longer produces death, but gives immunity, and if these cultivations were carried on a little longer, no symptoms of anthrax could be seen. Temperature

has a similar action on the anthrax virus. If the blood containing it be heated to 55° C. for ten minutes, and then inoculated when cold, it acts just as well as if taken through several cultivations. To procure real immunity against anthrax it is necessary to inoculate the attenuated virus twice, as cases have been known not to be rendered immune by one inoculation only. In attenuating anthrax virus outside the body, where we know they can only form filaments and spores, not only are the rods attenuated, but also their spores, and if these spores be introduced into a nutrient media, they will grow into bacilli which are markedly attenuated. There are many chemical substances by which anthrax virus may be attenuated. Carbolic acid, if added to the blood in the proportion of half per cent., and kept for something like twenty days, produces an attenuation, and any strength of virus may be obtained by keeping a few days longer if you require a weak vaccine, and kept a shorter time if a strong one is necessary. After this has been done a culture is made and used for inoculation. Bichromate of potash and many other antiseptics produce a similar attenuation. Certain animals possess an attenuating property on the anthrax virus, as, for example, white mice killed by anthrax provide a protective vaccine for sheep, and guinea-pigs for cattle. Now the question arises—Is it the bacteria or their products which produces the immunity? and I think we can come to the conclusion and say their products. For a proof of this we could not desire anything better than the production of inherited immunity. Inoculate a ewe in pregnancy with an attenuated virus of anthrax, the bacilli of which do not pass into the fœtal circulation, being prevented by the filtering process carried on between the fœtal and maternal placenta; still, that lamb when born is quite immune against such a disease. This surely proves that the products give the immunity, and not the bacteria themselves.

Other diseases, as fowl and hog cholera and even hydrophobia, can have immunity conferred against them by their products from cultivations, by first introducing small doses, and then gradually increasing them. Now the next question comes to us: "How can these products give immunity, for it is well known that although they may have a repelling action on the organism from which they spring, yet they can't remain in the body for any length of time?" The general idea is that these products first given in small quantities and then increasing, acclimatised the tissues and cells of the body to the action of the ptomaine or poison, and might here be

resembled to the immunity; some individuals reach against morphine, tobacco, alcohol and other poisons. Such immunity, according to Behring, is developed quickly or slowly, and the rapid variety is in his opinion connected with an alteration in the blood. That is, the ptomaine which gives the immunity is diffused to all cells by its being in the circulation, while in the slow form the reaction may be local, and the immunising material is thus gradually taken to the cells. These poisonous substances are supposed to be an albumose. Hankin, who separated an albumose from the anthrax germs, said it was really the substance which gives the immunity, and he could kill rabbits with the five millionth part of their body weight, yet if he inoculated with the one-tenth millionth of their body weight, he rendered all immune, and he also obtained an instrument so delicate as to even render white mice immune. However, a certain time must be allowed after protective inoculation before the invasion of a strong or ordinary virus. Thus if cattle are inoculated with an attenuated anthrax virus, and then in about three or four days afterwards be submitted to the ordinary virus, they will contract the disease, and as deadly as if not previously inoculated; but if time is allowed (and perhaps inoculated a second time as should be), say twenty-four days, the animals are immune against the disease. This can be accounted for quite easily. If time is allowed, the cells of the body are acclimatised to the action of the stronger virus, but if time is not allowed the albumose assists the strong virus rather than prevents its ingress.

Certain forms of septicæmia can be prevented by the introduction of some of the products of the organism which produces the disease, and this immunity guards the attack of the most virulent organism of the same nature.

From a consideration of these facts we are justified to assume such immunity as an acquired tolerance of the specific poison, and the gradual recovery of such a disease for instance as anthrax, in a partial state of immunity, gradually passes into a more perfect form. This tolerance which varies in degree, can produce an immunity more or less perfect in form, and this has been taken advantage of by Hueppe, as a method of proving that a putrefactive organism produces small doses of the same specific poison as the pathogenic form. The pathogenic probably reduces larger quantities of toxine than the non-pathogenic, but inasmuch as the saphrophytes do not induce disease, nor have they been cultivated into the virulent

organisms, the facts still remain dull. Although I say that these non-pathogenic have not been cultivated into the pathogenic organisms, it is still quite possible that it may be done, and perhaps is done when no pains are taken. In all probability the bacillus subtilis may be converted into the bacillus anthracis, and our Principal is of a strong belief that this can take place in a manure heap.

In a few cases animals can be rendered immune by using non-pathogenic organisms as vaccines, and in other cases again not so susceptible to the virulent diseases, and this seems to form a close relation between the pathogenic and the non-pathogenic organisms. The bacillus mycoides or earth bacillus when cultivated on a sterilised potato or gelatine, and inoculated into rabbits and mice, and even cattle, produces immunity against anthrax.

This view of immunity as a tolerance of the specific poison, simple and natural as it appears, would have no doubt received more attention were it not that a series of facts of a different nature which we are now led to regard as approaching in the direction of an antidotal action, appeared to be inconsistent with it. It has been discovered that if along with bacillus anthracis, other organisms which have no relation to it be introduced into an animal simultaneously, the disease does not run its normal course and indeed in some cases completely withstanding the disease. The streptococcus erysipelas is an organism which produces these effects against anthrax, and some other, of which I may mention the bacillus prodigiosus and the pneumococcus. Considering that the specific poison gives rise to the immunity, it seems most probable that the action of these other organisms depends on their products. This attenuation of the virulent organism by the products of the non-pathogenic and even pathogenic cannot be well explained. It suffices here to know that as the toxines of the pathogenic produce the immunity, so the products of those organisms which protect against anthrax, exert their action apart from the presence of the virulent organisms. Then the question comes, "How do the products of other organisms protect or modify the disease?" In some experiments with a saphrophytic organism acting with that of anthrax no complete immunity had been acquired, yet some degree of tolerance had been acquired as manifested by the disease running a more prolonged course. This action is no doubt the antagonistic of the products of the non-pathogenic over the pathogenic. There may also be perhaps some stimulating action on the

cells of the body, which are paralysed, so to speak, by any virulent organism in the susceptible, but by being thus stimulated by the products of the non-pathogenic are able to act more vigorously on the invading organism. It must not be supposed that any non-pathogenic organism will antagonise a pathogenic, for we see in the case of the bacillus prodigiosus inoculated with the virus of quarter-ill, the reverse is the effect, so in this case we may safely say that instead of antagonisms, we have a summation of their actions. Again the staphylococcus aureus, and albus, are much more virulent when acting together. Swine plague is also supposed to be due to a mixed infection. The sensitiveness of an animal to a disease germ is to be referred essentially to a susceptibility of the specific toxine, inasmuch as when the most susceptible species of animals has once acquired an immunity by a passing attack, it exhibits a refractoriness to a subsequent infection similar to those species that have a natural immunity from the disease. Some of the reasons at the present day indicate that a species more sensitive to the disease germ, may be more susceptible to the antidotal treatment than a more refractory species; a fact which can be understood when we consider that the action of the products of the indifferent organisms may vary in the different species, and that a difference of this nature may more than equalise for any original greater susceptibility to the poison of the disease germs. Pawlowsky found that in his experiments on rabbits inoculated with anthrax and erysipelas, that the animals which did succumb did not die of anthrax, but to erysipelas, the blood swarming with streptococci, although normally it suffers only a temporary attack from erysipelas, the microbe never being able to penetrate into the blood stream unless the vitality of the system has been previously lowered. We thus see it is of great importance to know what will prolong the course of a specific disease, as it will give time to the cells of the body to acquire a certain degree of immunity by the toxines, and thus deal more fluently with a subsequent attack. When a susceptible animal is inoculated with a vaccine, the tolerance acquired by the tissues is able to keep pace with the toxine produced, so that ultimately the power of the cells comes into action, and recovery ensues. This acquired immunity enables the animal to cope more successfully with a more rapid production of a stronger toxine, and, ultimately, of the most virulent organisms. We must, however, take into account the attenuating influence which the tissues may and probably

do exert on the organism, both locally and in the course of the disease, for it is a well-known fact that some specific organisms become attenuated during their existence in the system.

I will now pass on to the diseases of our domesticated animals in which immunity can be given.

ANTHRAX.

I am sure you will think I have spoken enough of anthrax, so I will only add here that immunity is given against this disease with wonderful success. Cattle are generally inoculated outside the ear, and sheep on the inside of the thigh.

HYDROPHOBIA.

Immunity against this disease is of great consequence, not only to render dogs immune, but also to protect the human frame. Pasteur is the man to whom all credit is due in this case. The virus taken from the fluid about the spinal cord of dogs is more certain than the saliva, and when introduced into monkeys, becomes attenuated. Pasteur also found that by inoculating rabbits, the virus increased in strength; so he was able to obtain any strength of virus from the first inoculated upwards. He then inoculated thirty dogs, commencing with the weakest virus, and giving a stronger each time to each dog, and in this experiment, three quarters of them were rendered immune to the strongest virus, even from the hydrophobia virus of wolves which is the strongest. If the spinal cords of rabbits dead of the disease are kept for a few days, and particularly if in warm weather, the virus becomes considerably attenuated when kept in glass tubes. This being a good way of attenuation, emulsions were made beginning with cords that had been exposed from three to fourteen days, and fifty dogs were inoculated for ten successive days, commencing with the virus that had been exposed longest, till that which had been exposed least, and in every case of the fifty dogs immunity was given. Pasteur having produced immunity in dogs, next brought forward the curative method for the human being, and if you will allow me to trespass a little I will describe his first experiment. His first subject was a boy who was severely bitten on the legs and arms by a mad dog, and after consulting medical authorities he inoculated him for ten consecutive days, making thirteen injections in the time. On the first day he inoculated twice, the first injection being an emulsion of cord exposed in a flask for fourteen days; the second on the same day had been exposed

ten days. On the second day he again inoculated twice, the first being exposed eleven days and the second nine. The following days he inoculated once only, until the last day was reached when he injected an emulsion made from a cord that had been taken from a rabbit which died on the same day. This curative method proved very successful, for the boy lived, and many persons bitten by dogs since, have been treated in a similar manner. The time, however, between the bite and the curative inoculation is of great importance, for if longer than three or four days, the curative action is not so certain, but if within this period it is most successful, and one of the greatest blessings that ever was put before the public. Here arises an important question of immunity: "Why does the virus obtained in the bite not exert a deadly influence before the attenuated virus?" and I think it can be explained in this way. When a bite is given, the virus remains dormant for some time and is localised, but when inoculation is carried out by an attenuated virus, it acts directly and acclimatises the cells of the body, before the active virus can exert any deadly influence. I don't think there is any particular spot to inoculate dogs; under the skin over the ileum is generally the place but a more rapid method is by injecting it into the jugular vein and in this way acts sooner on the cells.

(*To be continued.*)

NATIONAL VETERINARY ASSOCIATION.

THE Fourteenth Annual General Meeting of the National Veterinary Association will be held, at the invitation of the Eastern Counties' Veterinary Society, in the Assembly Rooms, Great Yarmouth, on Wednesday and Thursday, July 8th and 9th, 1896, under the presidency of Mr. William Bower, East Reedham, Norfolk. Professor McFadyean has consented to contribute a paper on "Swine Fever: its Nature and Suppression," the discussion of which will be opened by Mr. Clement Stephenson, Newcastle, and by Professor Edgar, Dartford, Kent. Professor Almond, Chelmsford, has promised to introduce for discussion "A practical method of gradually, effectively, and cheaply reducing Bovine Tuberculosis to manageable proportions, and utimately stamping it out." The great and urgent importance of these subjects should ensure a large attendance. The arrangements for the meeting are in charge of a most energetic committee, of which Mr. W. Shipley, jun., Great Yarmouth, is chairman, and Mr. W. R. Mills, Norwich, secretary.

ANOTHER COMMISSION ON TUBERCULOSIS.

It is stated on authority that the Government are about to appoint another Royal Commission to investigate the burning question of tuberculosis. The last Commission consisted of scientific experts, who dealt mainly, if not entirely, with the scientific aspects of the question. But, from all that can be learned just now, the new Commission will consist for the most part of practical men, who will be deputed to take up the findings of the scientific experts, and draft a thoroughly comprehensive and workable scheme for dealing effectively with this dire disease. This is a wise resolve on the part of the Government, for the prevalence of the disease has become a most serious source of loss to the stock-owners of the country, to say nothing of the way in which the seeds of consumption are sown broadcast among human beings through the use of milk drawn from tuberculous cows.

A LUSUS NATURÆ—DIFFICULT PARTURITION.

BY SAMUEL LOMAS, M.R.C.V.S., WILMSLOW, CHESHIRE.

On Wednesday night, January 29th, I was requested to go and see a cow which the owner thought was putting her uterus down although she had not calved, but had very strong pains.

On my arrival I found the intestines of the fœtus protruding just beyond the vulva. They were congested, thickened, and blood-stained. I traced these forward along the mesentery to their attachment under the spine. I could feel bare ribs, spine, and heart bare, pulsating : the arteries from it beating, and all the viscera, but no hair or skin.

At first I could feel no head and no legs. As the viscera were impeding my exploration, I removed them, and afterwards found the poll, worked it back, and got to the orbit, into which I inserted a hook, applied traction, and got to the jaw. I placed a noose on the jaw, and afterwards found two fore-legs which I roped ; we then got the head and the two fore-feet into the vagina, while here the rope on the jaw broke the bone, and immediately after there appeared a large fluctuating substance under the lower part of the vagina protruding beyond the vulva. I put the fœtus back a little and reduced the enlargement, brought up fœtus again, and the substance reappeared, the vagina covering it was cut through, I believe by the fœtus's teeth, which, in consequence of the jaw being broken and the traction pat upon it by the

rope, stood out at an angle from the ordinary position, and out came the cow's small intestines. As the cow was lying down, we made her get up, put the calf well back, and put the intestines back through the laceration. I held the edges of the wound together until we had got the fœtus well on it, and then pulled the fœtus away. I at once sutured the wound with a continuous silk suture, getting good hold of all the tissues, backed cow well behind with straw to raise hind quarters, gave purgative and commenced fomenting. The cow has made a capital recovery, pulse never exceeded 68, nor T. 102°F.

As will have been gathered from preceding description the fluctuating substance, which protruded from vagina, was the intestines of cow being hooked up under the vagina by hind feet of fœtus.

I think this is one of the unique cases on record as it commenced by the fœtus presenting its intestines for treatment, and terminated by the mater presenting hers for replacement.

The Fœtus.

As soon as born the fœtus reverted to the position as it was in utero, viz., the side and viscera being presented, and the

head and all the feet being furthest from the os uteri, the head being in the centre, the fore legs twisted round one side of the head, the left side as it lay in utero, and the hind legs round the other side, the right.

The right fore leg.—Radius thin: front surface thin and sharp, with an angle at knee, like an ordinary elbow and foot twisted half round.

Left fore leg.—Normal to fetlock, below it was bent, foot upward and forward.

Hind legs.—No ossa innominata. From stifle to fetlock

normal; fetlock, pastern and foot curved upward and forward (half-moon shape).

Head and tail.—Normal.

There were no abdominal muscles. The skin that ought to have formed portion of abdominal wall was doubled forward over the shoulders, forming a kind of hood, which reached to the calf's poll in the centre, down to the elbows on one side and to the stifles on the other side.

The spine was curved—first upward, then downward, then forward—forming two distinct spinal curvatures.

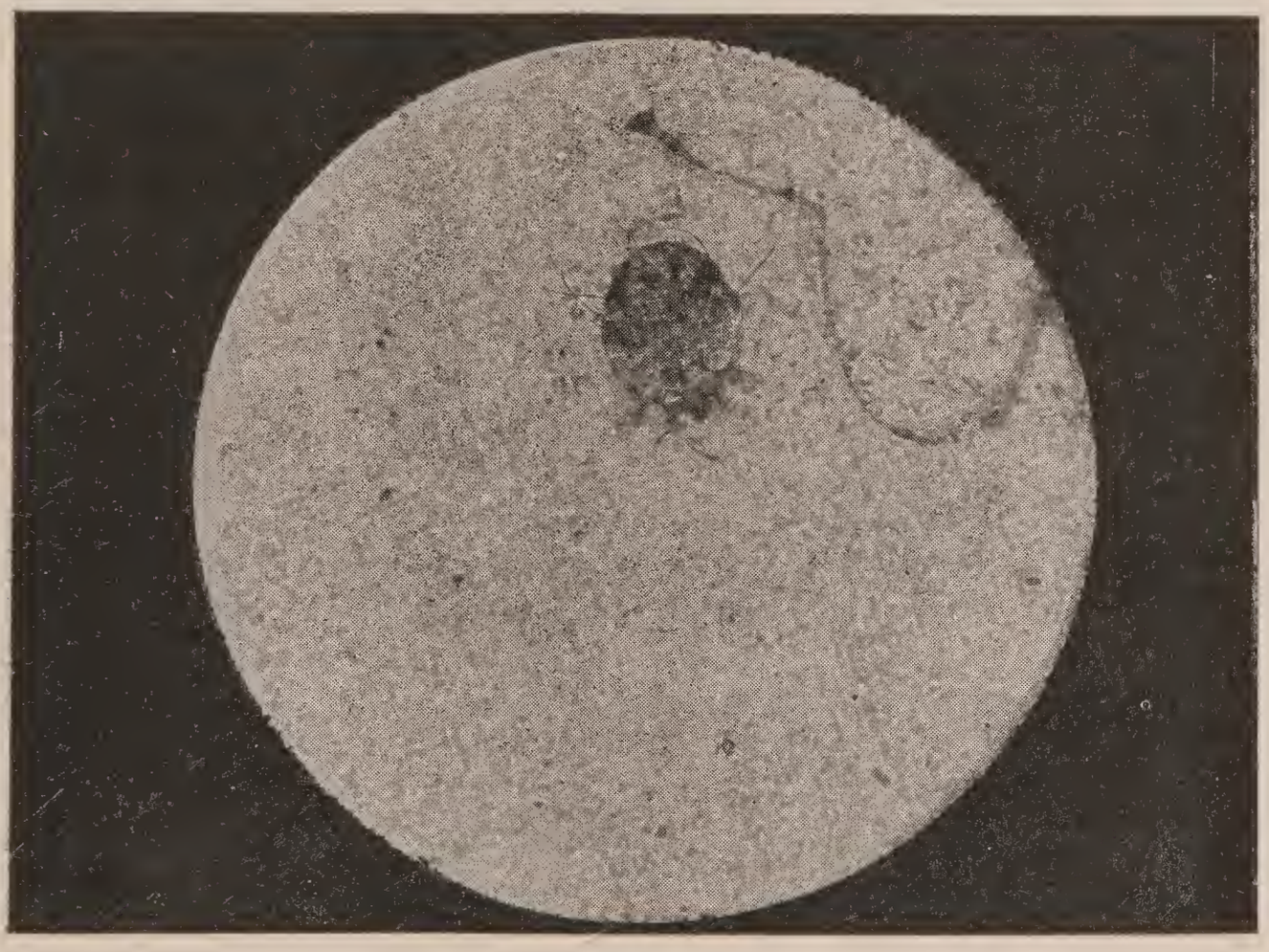
MANGE IN CATTLE.

BY W. R. DAVIS, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

IN the February number of THE VETERINARY JOURNAL I reported on outbreak of sarcoptic mange which occurred among dairy cows in the suburbs of Edinburgh, and stated that there had been an extension of the disease to the dairymen. In the *Veterinarian* for March Mr. E. F. de Jong, L.R.C.P.E., L.R.C.S.E., L.F.P.S.G., F.R.C.V.S., has a communication describing the same outbreak, in which he says that the acarus is not a sarcopt but a psoropt, and that the skin affection from which the attendants suffered was not

scabies, but eczema, "due to irritation produced by secretion from the cows." I will only say with regard to the latter statement that Dr. Williamson, Assistant Medical Officer of Health for Edinburgh, has ample proof that it was scabies; that Mr. Rutherford, F.R.C.V.S., and Principal Williams both saw the men, and they both considered that the men had the "itch," that some of the workers had been affected for nine weeks, and that they did not get better until treated with acaricides. However, I am not concerned to prove whether the men had eczema or scabies, but I am interested that the dentity of the acarus under consideration should be settled,

because authorities so confidently assert that the sarcopt does not affect the ox. Although I was perfectly certain about the matter myself, I have, since reading the article by Mr. E. F. de Jong, L.R.C.P.E., L.R.C.S.E., L.F.P.S.G., F.R.C.V.S., made a large number of preparations. These have been examined by Dr. Beard (University of Edinburgh), Mr. R. S. Macdougall, B.Sc., Lecturer on Parasites at this College, Dr. Hunter, Principal Williams, and several others, and the unanimous opinion expressed is that the parasite is undoubtedly a sarcopt. Two microphotos taken by



Mr. O. C. Bradley are appended, and it can be easily seen that the description of a sarcopt is accurately conformed to.

Body rounded; head short, rounded; sucker borne on a simple pedicle (not as in the psoropt on a three-jointed pedicle); posterior legs are not seen beyond the contour of the body when the creature is viewed dorsally. (In the psoropt the posterior legs do protrude.) A psoropt has, in fact, a long head, long legs, and a three-jointed pedicle, while a sarcopt has a short head, short legs, and a simple pedicle.

It is quite true that Mr. E. F. de Jong, F.R.C.P.E., L.R.C.S.E., L.F.P.S.G., F.R.C.V.S., does not state in so

many words that I mistook a psoropt for a sarcopt, but, of course, the inference is obvious. I am not going to say that Mr. E. F. de Jong, etc., did not find a psoropt, because one does not exclude the other at the same time I would advise him however to examine a few more specimens.

The tone of superiority and finality adopted by Mr. E. F. de Jong, L.R.C.P.E., etc., is rather amusing, one would think, that it must make him feel very comfortable, only it does not sort well with loose inarticulate writing. Such expressions as "the animal licking itself with its tongue" (what else could the poor thing lick itself with), etc., etc., might make one suspect the superior and final person in weightier matters.

"LOUPING ILL" IN SHEEP.

Mr. R. Greig Smith, of the Durham College of Science, read a paper, which was a report on the result of a series of experiments towards the determining of the cause of "louping ill" in sheep, which have been carried on during the past year by Mr. Alexander Meek and himself. The disease, he said, made its appearance in the form of trembling in the middle of April, continued during May, and gradually disappeared during June. Lambs were more liable to the disease, but sheep were also susceptible to it, and in both the symptoms were the same. It ultimately resulted in more or less complete paralysis. Regarding the infectious character of the disease, it was well known that sheep bred on diseased places were not nearly so liable to the disease as sheep which had been introduced from unaffected places. "Louping ill" might be introduced into a new place, but in such cases, unless the importation from affected farms be continued, the malady might disappear. The probability of its doing so appears to depend upon the nature of the soil. In this country it was confined to the North Tyne district of Northumberland and to the contiguous border counties of Scotland. It was rare in Berwickshire, but was known in other parts of Scotland. It was one of the features of the illness that certain "cuts" of land were very liable to it, while others, even on the same farm, were just as free. In many cases the nature of the pasture was such as to suggest to an experienced man the probability of its being subject to the disease. A dry and foggy pasture seemed best suited for harbouring the cause of the malady; but a peculiar feature was that the disease did not reach the same intensity,

even in neighbouring places, during the same year. After dealing at some length with the pathology of the disease, the paper stated that the changes in the appearances might well be explained from the action of some poison of an irritant character introduced into the blood. A very general impression amongst farmers and shepherds was that the disease was in some way associated with ticks. Some said that they never saw "louping ill" without ticks, nor ticks without "louping ill." Reports generally favoured such an opinion. Ticks, the writers imagined, might be present without the disease, but the evidence for the other case, the disease without the ticks, appeared to be very unconvincing. The fact remained that farms and districts noted for the disease were peculiarly rich in this parasite. The ticks were developed on the ground in the spring, and, impelled by hunger, attached themselves to passing animals. The result of the first year's experiments they had conducted were such as to convince them that the location of the bacteria showed that the affected animals were inoculated by the tick, and it followed that the tick must have carried them from the soil or grass. Further details were withheld until further experiments had been conducted, but it might be said that until the bacterium, which undoubtedly produced "louping-ill" in sheep, was isolated, cultivated, and experimented with, it would be immature to suggest means of preventing, combating, or curing the disease; but they were of the opinion, from what they had done, that any process which tended to keep down the ticks should have a preventive effect upon the disease.

A cordial vote of thanks was accorded to Mr. Meek and Mr. Smith for their interesting report.

Editorial.

ADMISSION OF FOREIGN CATTLE.
MR. WALTER LONG'S AGRICULTURE BILL.

THAT portion of this Bill which excludes the landing of Canadian and Foreign Store Cattle has been received with much disfavour by the cattle feeders of Scotland.

Perhaps it is not generally known that in several counties in Scotland the number of cattle bred is quite inadequate to the demand for feeding purposes, consequently these cattle fetch sometimes a higher price when lean than when ready for the butcher, and a feeder of such stock often experiences

an actual money loss, in addition to the cost of feeding and tending: has only a balance towards this loss in the form of the manure, whereas when Canadian cattle were allowed to land, they could be bought—fully grown big cattle, three and four years old—at a much less price than the home-bred ones; being fully matured, they fattened rapidly, and often sold to the butcher at £10 or more than their original cost, thus leaving a handsome profit over and above the cost of feeding, &c.

As is well known, these cattle have been kept out of the country on the plea that they brought pleuro, but now that that bubble has burst, and when it is proved beyond a possibility of doubt that there is no pleuro in Canada, why should these profit-paying animals be longer prohibited, and why, indeed, is the prohibition to be made permanent?

It is found to be impossible to rear cattle on highly-rented lands, and to make at profit even at the comparatively high prices they command as store cattle. Thus the agriculturist is hampered and kept back by several unfavourable conditions. 1st. Owing to the rent of his land he is unable to breed and feed his stock to realise a profit. 2nd. He is unable to make a profit by his home-bred bought stock. 3rd. He is prevented from obtaining his store cattle from the only source from which he has a chance of securing a profit; and, finally, he has to compete with foreign fat cattle slaughtered in this country.

At a meeting of the Scottish Chamber of Agriculture held in Edinburgh on the 4th inst., the following observations were made:—

Admission of Foreign Cattle.

Mr. ANDREW HUTCHESON drew attention to the Government's proposed amendment to the Cattle Diseases Act, which, he said, would work more havoc among farmers than any measure they could be called upon to consider. He had, he said, always been an advocate of the admission of Canadian store cattle, and he still believed that it had never been thoroughly proved that they had brought disease into the country. But they had got past that stage—they were told now that the ports were to be permanently closed, and there would be no more Canadians. He would have accepted that position at once, and without serious demur, if Mr. Long had had the courage to go a step further, and prohibit the landing of fat cattle on these shores as well as store cattle. There could be little doubt that [that was the right thing to do. He did not know what was Mr. Long's

private opinion on the point, but he quite believed it was in this direction. Mr. Chaplin, at all events, made no secret that that was his view; and in an interview that he (Mr. Hutcheson) had with him last year, he plainly said that that was the right thing, but that it would be all but impossible to carry it in the face of the opposition of the shipping and other interests. He (Mr. Hutcheson) did not doubt it would be difficult to carry such a measure; but were the agricultural interests of Great Britain to be sacrificed to all other interests? He was prepared to say that if Mr. Long's present Bill were carried there would be no economic rent in the land of Scotland. Many short-sighted breeders were proclaiming that this Bill would be a great benefit to them, and would raise the price of their cattle. He was glad to see, however, that some of their broader-viewed breeders were coming to see that after all the experiment of shutting out the raw material and admitting the finished article might be a very doubtful one. It was something like shutting out wheat, but admitting flour, and then expecting the price of flour to rise. No business could be carried on under these conditions. At the present moment it was the fact that it was the numbers of foreign cattle that came to their shores that regulated the price of beef, and not the quality of their home cattle. He was surprised that the landlords did not see the calamity that was threatened them. Farmers might get ruined, and go to the wall, and be done with it. But landlords had their land, and if farmers got ruined, they would get it all on their hands, and what could they do with it? The only fair thing to do in the circumstances was to make the whole cattle trade from abroad a dead meat trade, not allowing anything to be slaughtered on this side. He moved—"That, in the opinion of this Chamber, the present conduct of the cattle trade is adverse to the interests both of breeder and feeder, and its continuance on the same lines, as proposed by the Bill at present before the House of Commons, and entitled a Bill to amend the Diseases of Animals (1894) Act, will still further intensify the agricultural depression."

Mr. SCOTT-DUDGEON said no notice had been given of this motion, and as Mr. Hutcheson was known to hold extreme views on this subject, he thought it would be very injudicious at a small meeting like that to deal with the matter.

Mr. PETER FYSHE, Newtonlees, seconded Mr. Hutcheson's motion. He did not, he said, know whether Mr. Scott-Dudgeon was a breeder or a feeder, but this he could tell him was a matter that was of very vital importance in the district

from which he came—East Lothian. He supported everything that Mr. Hutcheson had said, and thought very strong representations should be made to the Government on the subject. The prices of store cattle were at present out of all proportion to the prices of fat cattle, and Mr. Long's Bill would only accentuate the evil, unless, as Mr. Hutcheson suggested, he made the whole cattle trade a dead meat one.

Mr. SCOTT-DUDGEON expressed his belief that the new Bill would be of immense benefit as placing the restrictions on a permanent footing. He was quite at one with Mr. Hutcheson in thinking that the foreign cattle trade should be a dead meat one entirely, and if Mr. Hutcheson would limit his motion to that, he would acquiesce in it at once.

Mr. HUTCHESON accepted the suggestion, and the motion was amended to read that no alteration in the law would be satisfactory which did not absolutely prohibit the importation of live cattle and sheep into this country. The resolution was then unanimously agreed to.

HONOUR TO WHOM HONOUR IS DUE.

IF I were giving a valedictory address to my students and wished, after furnishing them with such scientific rules and moral principles as had commended themselves to me during a busy life, to set before them an exemplar for their imitation, an embodiment of all that is excellent in a veterinary surgeon. I should have no difficulty in finding one. That exemplar would be Dr. George Fleming, C.B., who has recently been singled out by Her Majesty for the distinction of a special pension. In conferring this honour, the Queen had not so much in view the promotion of Dr. Fleming's material comfort as the wish to bestow a distinguishing honour on a brave and worthy man. Dr. Fleming is, fortunately, by no means a poor man, as he draws a pension from the Army for his great services, and the special pension now bestowed by the Crown will not very greatly increase his income, but neither he nor we, his colleagues, ought to think the less of the kindness and thoughtfulness of Her Majesty in thus bestowing a mark of her favour on one who, perhaps more than anybody else, may be regarded as the champion of the veterinary profession. If any of my readers will take the trouble to examine the veterinary calendar for the German Empire, published by Hirschwald of Berlin, he will see that

not only is the name and address of every surgeon in the empire registered therein, not only are the surgeons classified and arranged according to the posts, civil or military, which they hold, but a list is given of the orders and distinctions (*Orden und Ehrenzeichen*), by which brave and able men have been rewarded at the hands of a wise Government. In Germany there are surgeons who are entitled to wear the decoration of the Red Eagle, in four classes, the Crown in three classes, the Hohenzollern in two, and so on. Such privileges in England are conspicuously absent. It is true that Dr. Fleming is a Commander of the Bath—no mean distinction—but how many veterinary surgeons enjoy, or have enjoyed this privilege? Let us make much of our worthy colleague.

I have said that my friend George Fleming might be taken as a model of everything that a young student ought to strive after and imitate. It is not given to all of us to accomplish so much important work as Dr. Fleming has achieved. Very few have the same abilities; most of us are circumscribed in our powers, or in the sphere of our activities; it is possible that wealth may clog, or poverty may chill our better impulses; but what I say is that every student may find something in Dr. Fleming's career to encourage him in the hard battle of life, and for this we ought to be glad. Mere precepts are of little avail for the guidance of youth; a barren gospel of "thou shalt not" never produced a good or noble character; the difficulty is to discover, first, what we can and what we may do, and then how to do it thoroughly, honourably, and manfully. Let my younger readers follow the short sketch of Dr. Fleming's past career, which I append, and be of good courage. Let them read his books and fill themselves with his wisdom and learning; then, if they can obtain leave, let them visit him in his Devonshire home, and gain consolation and help from his own lips.

Dr. Fleming was born in Glasgow in 1833, and studied veterinary medicine and surgery in Edinburgh, under Professor Dick, gaining many prizes and medals during his college career. He entered the army as a veterinary surgeon in the fateful year 1855, and went through all the horrors and privations of the Crimean campaign. Not content with this, he volunteered for the Chinese expedition in 1859, and remained in China till 1861. He likewise served in Syria and Egypt in 1867, and went on from grade to grade till he became principal veterinary surgeon to the British army in 1883; from this post he retired, in 1890, with a pension.

On an important point in connection with the army, I allow Dr. Fleming to speak for himself:—

During the time I was at the War Office great attention was devoted to improvement in the health of army horses at home and abroad, by instructing veterinary officers in the principles of sanitation and stable management, the diminution of lameness and disease, as well as to the eradication of maladies of a contagious nature. The result was soon apparent in the greatly increased health and soundness of troop-horses; but the most striking and satisfactory consequence of efforts in this direction was the total suppression of glanders, which for years had caused heavy loss and great trouble to the mounted corps, and at one time was supposed to be ineradicable. For some years before my retirement until the present time, there has not been a case recorded, notwithstanding the prevalence of the contagion in the stables of civilians. No other European army is free from glanders.

The degree of Doctor of Laws was conferred by the University of his native town on Mr. Fleming in 1883, in recognition of his services to human and animal medicine, and he has been elected member of innumerable learned and scientific societies both in this country and abroad.

In concluding this very brief notice of the man who preceded me in the editorship of the VETERINARY JOURNAL, I cannot but refer to the crowning glory of Dr. Fleming's life, as regarded from the veterinary surgeon's point of view. I allow him once more to speak for himself, and with this quotation take leave of him for the moment, wishing him the enjoyment of his well-earned honours and emoluments:—

Since entering the veterinary profession, my chief object has been to raise it socially and scientifically, so as to increase it in utility and public estimation.

I was President of the Royal College of Veterinary Surgeons from 1880 to 1887, and Member of Council from 1868 to 1888; and have been a Member of the Board of Examiners from 1872 to the present time, during which period I have examined on materia medica, anatomy, pathology, and morbid anatomy.

In the long interval during which I have been connected with the Royal College, I have been the means of effecting several important reforms in the education and position of veterinary surgeons generally, among others being the institution of the degree of Fellow—a post-graduate degree calculated to stimulate Veterinary Surgeons to continue their studies after they have left College.

In 1881, at my own cost, and after much anxiety and trouble, succeeded in obtaining from Parliament the Veterinary Surgeons Act, which put the profession in a recognised and well-established position, and endowed it with similar privileges to those possessed by the Faculties of Medicine and Surgery.

OUR readers are informed that the author of the valuable contribution in our last month's issue, on the disease "Surra," was Veterinary-Captain A. F. Appleton, Inniskilling Dragoons.

THE tuberculin (referred to on page 303) test is in some danger of condemnation if heed be given to the results obtained by some veterinarians who apply it. These men state that there is sometimes no elevation of temperature when the animal is evidently tubercular, and that elevation of temperature often occurs in animals that are afterwards proved to be healthy. To the first experimentalists I wish to say that they are not to forget that elevation of temperature is not so appreciable in animals severely invaded by the disease, and in which the temperature is already elevated; to the second experimentalists, that care should be taken that the animal be properly tested before as well as after tuberculization.

I have been informed that some men who are members of the profession inoculate with tuberculin in the public market, when animals are in an excited and more or less febrile condition, and condemn or pass such animals in the course of a few hours. Such a proceeding is one of those things that bring disgrace to the veterinary profession.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

Annual Meeting and Dinner.

THE annual general meeting and dinner of this flourishing Association were held with great success on Friday, February 28th, at the Great Western Hotel, Reading. The chair was taken at the meeting by the President, Mr. A. L. Butters, London. and those attending included Messrs. J. F. Simpson, J.P., Maidenhead; W. J. Flanagan, Reading; H. G. Lepper, Aylesbury; H. G. Rogers, London; J. P. S. Walker, Oxford, hon. treas.; J. Sutcliffe Hurndall, London, hon. sec.; Albert Wheatley, Reading; P. Irving, Chipping Norton; R. J. Verney, Oxford; E. C. Howard, Newbury; E. P. Owen, Thame; H. Watkins-Pitchford, Blackwater; G. E. King, Abingdon; W. Hunting, London, hon. associate; Mr. Edward Bird, Theale; and Professor Macqueen, Mr. J. F. Maidment, Mr. James Rowe, and Mr. Frank W. Dowell, London, visitors.

Apologies for inability to attend were received from Sir Henry Simpson, Professors Pritchard, Williams and McCall, and twenty from other members of the Association.

The minutes of the last meeting were read by the Hon. Sec., and duly signed by the President.

New Members.

On the proposition of Mr. HOWARD, seconded by Mr. WHEATLEY, Mr. W. H. Davidson, M.R.C.V.S., and Mr. J. McKerlie, M.R.C.V.S., both of Hungerford, were unanimously elected members of the Association.

The Jubilee Memorial Fund.

Mr. J. F. SIMPSON, in accordance with notice given, proposed "That the sum of £20 be voted from the funds of this Association to the Jubilee

Memorial Fund." It appeared, he said, by their good treasurer's account that this Association had in hand a balance of £92 4s. 9d., and it occurred to him that the present was a very fit opportunity for them to dispose of some of that balance in a way which, he ventured to think, would be approved by all the members, and would certainly be very acceptable to the committee who had in hand the management of the Jubilee Memorial. They were aware that it was the intention of the Council to found scholarships, but he was not in a position to inform them of the precise nature of those scholarships, for the simple reason that the matter had been kept open in order that the committee might know the decision of the various veterinary medical associations. The fund would close on the 15th March.

Mr. IRVING had very great pleasure in seconding the motion.

The PRESIDENT remarked that the object was a very worthy one; and Mr. Walker having, as treasurer, expressed hearty approval of the proposal, the resolution was carried unanimously.

Grunting in Horses.

The circular letter of the Lincolnshire V.M.A. (read at the meeting of the Association in November, and since printed and circulated among the members), was now read by the HON. SECRETARY, and the PRESIDENT invited discussion upon it.

Mr. HURNDALL said that so far as his memory served him, the general feeling at the meeting he attended when the matter was discussed, was that the decision come to by the Lincolnshire Association, in which it was endeavoured to lay down as an axiom that grunting was a distinct evidence of unsoundness, was not favourably received at the Central Veterinary Medical Society. There were gentlemen who argued that in the first place they had no evidence as to the pathology of grunting, others said grunting was no evidence of disease unless it was accompanied by some more serious symptoms with regard to the respiratory organs, which could only be discovered by measures beyond those that were generally taken for discovering whether a horse grunted or no. It was a very common practice to threaten a horse with a stick to discover whether he emitted a sound which was called grunting, and, if so, some practitioners would not pass a horse. Others expressed the opinion that that was a very impolitic procedure, and was opening up a question concerning which there were many objections. If a horse emitted that peculiar sound called grunting, which varied very considerably under certain conditions, and if at the same time that horse gave evidence of defective respiration when put through the proper test for the same, then he would admit that grunting was a proper ground for certifying unsoundness; but unless the veterinary surgeon had some distinct proof beyond the fact that the horse grunted, he held that he was not warranted in giving an adverse opinion with regard to the soundness of that horse. He had the opportunity at the meeting of the Central Society of giving distinct proof, from his experience of a horse which he rode two seasons with the Cambridgeshire Foxhounds. That horse invariably "grunted" when he landed over a fence, but he was as sound in his wind as any horse that ever walked this earth. Plenty of other cases might be brought forward to show that it was wrong to condemn an animal on such *primâ facie* evidence. One gentleman stated a case at a meeting of the Central Society where a horse was known to emit the sound under certain conditions, but there was absolute proof that he was perfectly sound in his wind. It was necessary before condemning a horse to satisfy themselves that there was some absolute cause for the grunting. It was said by some that the majority of horses that made this peculiar noise became ultimately roarers. He himself looked on that as merely a coincidence; but

where it occurred he thought they would not find it amongst horses of the thoroughbred type, but amongst horses of the commoner type, such as those which ran in omnibuses and tramcars, and heavy cart-horses. Where such horses grunted there was room for suspicion, but even in those cases it could not of itself be accepted as proof of unsoundness. At the Central meeting the prevailing opinion of the large majority was absolutely against accepting the dictum that because a horse grunted he should be reckoned unsound; and it was, further, considered unwise for a veterinary surgeon to commit himself to any such opinion.

Mr. WALKER was astonished that any Association would agree to such a resolution. In the first place the language was incorrect, for on his mind grunting was an effect and not a cause. Grunting was not a sufficient reason for the rejection of any animal. He had been rather struck with the discussions at meetings of various societies on that question. He should say that nine-tenths of those who had spoken agreed with the idea that all grunters eventually became roarers. If that was so, grunting must be a modified form of roaring, and so, if it was a disease, it must be one and the same disease. He was not inclined to believe that. He did not think many would dispute the proposition that there were two distinct forms of grunting—a grunting that did proceed to roaring and a grunting that had no relation to roaring whatever, and consequently would never develop into it. He dared say also that most would agree that many horses would grunt through fear simply. It was a perfectly normal emission of sound from the sudden contraction of some of the muscles of the larynx, and had no relation to disease at all. If that were so, he thought it would be a great hardship to condemn a horse for emitting a little sound when tampered with. He thought it indisputable that there were many horses which grunted and yet never became roarers. Again, some seemed to be "at sea" as to whence the sound proceeded. Some even thought it was connected with the lungs. If they tested it on themselves they would easily find that this sound proceeded from the throat, and that they could not make it proceed from anywhere else. He thought the profession was practically unanimous with regard to a confirmed roarer—that the course was atrophy of the muscles of the larynx. If that was so—and he quite believed that it was—there could be no difficulty as to where the sound proceeded from. He thought there were two forms of grunting which had to be distinguished the one from the other, and that unless a horse did more than simply grunt in the ordinary way he was not an unsound horse. He moved, "That grunting being an effect, cannot be a cause of unsoundness, and that when unaccompanied by any abnormal sound or alteration of structure it is not an unsoundness, but a perfectly natural emission."

Mr. HURNDALL seconded the proposition *pro forma*, to bring it before the meeting.

Mr. SIMPSON agreed with Mr. Hurndall as to the importance of the subject. It was most important that those who had the opportunity of making what he might term a complete examination of hunters and other horses for their wind. By the term complete examination he meant not only testing them in the "rough and ready" way by striking at them with a stick, say at a repository, but also had an opportunity of galloping the animal in the plough. It was of still more importance to those who had limited opportunities of forming an opinion as to the soundness or otherwise of a horse's wind, say at a repository where there was no galloping sound. It would also apply to those who had to decide as to the soundness or otherwise of the wind of horses exhibited in show-yards. In the discussion at the Central Association one member drew the distinction between unsoundness of wind and unsoundness in other parts of the body. If he remembered rightly, it

was urged by that gentleman that the sound of grunting was evidence of some internal disease, it might be of the abdominal or of the thoracic viscera, but he would not pledge himself to say it was evidence of unsoundness of wind. He (Mr. Simpson) viewed it as a very dangerous course to take to deliberately amongst themselves declare that every sound which might be termed grunting was evidence of unsoundness of wind, which was, he took it, how the Lincolnshire Association applied the term. Where were they to draw the line? As Mr. Walker had well said, there were many sounds emitted when a horse was struck. If a horse gave that uncontrolled prolonged grunt which in "horsey" circles was called "bulling," that horse ought in his opinion to be condemned, because 99 out of every 100 horses galloped after such a sound had been obtained from them would roar. But there were also, as Mr. Walker said, such sounds as might be obtained from the human being. Such a sound might raise a little suspicion in the mind of the examiner, but that alone should not justify any veterinary surgeon in condemning a horse as being unsound in wind. They wanted some confirmatory evidence before they proceeded to condemn that horse. In his opinion, if a horse, in addition to emitting that sound, had what he might call a soft, prolonged cough when pressure was applied to the larynx, that would rouse his suspicions. If in addition to that he failed, without great pressure, to obtain response to his pressure on the larynx, he should still have greater suspicion of that animal; and on no account would he, having those three circumstances before him, give a sound certificate without the opportunity of galloping the horse. But in the absence of the two last pieces of evidence and the presence of the first, he thought no veterinary surgeon would be justified in condemning a horse. No one could fail, if he tried hard enough, to get a sound of some kind from every horse on striking him with a stick. Therein lay the danger- A veterinary surgeon passed a horse, having tested him moderately. He might have failed to get a sound with any ordinary test, or by galloping. But a man who was determined to get a sound of some kind would succeed. What would happen afterwards should the purchaser of that horse be dissatisfied in any way with the animal and desire to make the veterinary surgeon responsible for having, as he would say, made a mistake? He would get a noise out of that animal. Although litigation occasionally arose now as to the soundness of a horse's wind, he ventured to think if they adopted such a resolution as that of the Lincolnshire Association it would increase their difficulties tenfold. At the same time, he did not altogether approve of Mr. Walker's motion, and he therefore proposed as an amendment "That in the opinion of this meeting grunting alone is not necessarily an evidence of unsoundness."

Mr. Owen seconded the amendment.

Professor Macqueen, who was asked to join in the discussion, said he had already exhausted all he had to say on the subject, but he might repeat some of the statements he had previously made. He held what he would not term dogmatic views, but views which he had arrived at after very fair consideration of the subject. They had heard that day, and they had read in the reported discussions, that there were two kinds of grunting—the grunting that was associated usually with some defects of wind, and the grunting that was of no consequence whatever. Before proceeding with the subject he wished to make the remark that they would observe that those who maintained that grunting had some connection with defects of wind, were most careful to leave out of consideration the existence of its connection with whistling. They always said there was a grunting characteristic of roaring, but no one had yet asserted that there was a grunting connected with whistling. With regard to grunting, he went entirely against the Lincolnshire Association. He did not believe that grunting necessarily indicated unsoundness of wind. What it could be explained to be was quite another matter. In connection with that

point some had gone the length of admitting that there was a special or exaggerated form of grunting. He was not inclined to restrict the term to any special form, but those who believed it was of importance, maintained that grunting was generally noticed in horses that were unsound in their wind. That had not been his experience; but if it had been his experience he would like to ask those pro-grunting individuals if they were prepared to maintain the converse statement—that if a horse did not grunt to a stick he was therefore to be considered sound of wind? That was a rather important point, especially in repositories. He was himself prepared to deny both propositions: in other words, he fell back upon Mr. Simpson's statement that grunting was not necessarily evidence of defective wind. Since this question had been raised by the Lincolnshire Association he had taken occasion to make a few notes, and—although he was not inclined to rely very much upon statistics—he still maintained that from what he had gathered at least 66 per cent. of horses unsound in their wind, either from roaring or whistling, did not make a noise to a stick. That was rather a large statement, but those who examined horses by galloping them, and would take the trouble to test the same horses by threatening with a stick, would find it was so. Then there was the opposite condition—that a horse which when threatened emitted a sound did not roar when galloped. The late Mr. Youatt, who was credited as the first authority to pay attention to roaring, looked on grunting and roaring as synonymous; but he confessed that the mere testing of a horse's wind by threatening with a stick was most unreliable. Professor Williams did not look upon grunting as a very important defect; and General FitzWygram admitted that a horse with an overloaded stomach would grunt when threatened with a stick. In other publications the condition called grunting occupied a very small space, being merely referred to in the text-books. Oliphant no doubt mentioned that grunting was unsoundness, but he gave nothing in support of it, and Youatt did not mention it. The French and German writers did not recognise it at all. He did not believe the profession would ever be in agreement upon the question, and did not think it would be wise to come to any such decision. He thought every member had a perfect right to exercise his own judgment, and, if he thought it necessary for his own protection, he should mention that a horse grunted. He did not see that this discussion would ever bring about unanimity in the examination of horses' wind, but it would do good by drawing attention to the point.

Mr. HURNDALL, after Mr. Simpson's remarks, invited Mr. Walker to withdraw his resolution in favour of the amendment. Mr. Walker had made two remarks anent roaring which his (the speaker's) experience did not confirm. He said that the veterinary profession generally admitted that roaring was due to atrophy of the muscles of the larynx. His experience, based on *post-mortem* examinations, was that in heavy-class horses the statement was a correct one, but that in thoroughbred or better class horses it did not apply. He was satisfied that roaring did very often come from the lungs, and that the larynx was not defective. Moreover, he was satisfied that a horse suffering from roaring was capable of being cured, or at any rate very materially alleviated, by medical treatment, a proof of which he received about a week ago. He believed that with better class and thoroughbred horses the larynx was rarely the cause of the disease.

Mr. WALKER agreed to withdraw his resolution in favour of the amendment.

The PRESIDENT said that, having given the matter some consideration, he quite agreed with Mr. Simpson that grunting was not necessarily evidence of unsoundness. At the same time, speaking from his own experience, horses that grunted should be looked on with suspicion.

After some remarks from Mr. Lepper and Mr. Verney, Mr. Simpson's resolution was carried *nem. con.*

The Proposed Representative Union.

The Hon. SECRETARY read the circular letter addressed to him by Professor Macqueen.

Mr. SIMPSON proposed the appointment of a committee, considering Professor Macqueen's suggestion an admirable one in the interests of all local societies. It was, however, anything but advisable in the interests of the National Society, unless there were very considerable modifications of the suggestions. Taking No. II., for instance, "All effective members of affiliated societies should become, by virtue of affiliation, effective members of the National Veterinary Association, without further individual subscriptions," he thought they would readily see the effect of it if adopted, because it was pretty well known that most members of the profession who interested themselves in the National were also members of local societies; and in these days of bicycles and horseless carriages, half-guineas will be studied more and more. At the same time, he thought it so important that they should have a Central Association to which they could look in times of necessity for guidance that he most willingly proposed the appintment of a committee to consider the subject.

Mr. HURNDALL seconded the motion, observing that there appeared, as Mr. Simpson had suggested, some little difficulty as regarded subscriptions on the face of it. Some years ago he submitted to the press somewhat similar ideas, suggesting also the establishment of a quarterly journal in connection with the National Association, which should be looked on as the leading journal of the profession, and in which all matters connected with the profession might have full ventilation.

The resolution was carried unanimously; and Mr. Simpson then proposed that the President, the vice-presidents, the hon. sec., and the hon. treasurer form the committee.

Professor MACQUEEN explained that the letter was entirely an unofficial communication. It was simply the result of a remark in a speech by Mr. Wartnaby, and was entirely private and unofficial. He had sent similar letters to all the Societies in England and Scotland, and also to the President of the Society that met in Dublin, and wherever the letter had been read, it had been received with favour, and a committee had been ppointed. When he received intimation that the Societies had all appointed committees, as he hoped would be the case, he should be bold enough to invite those committees to meet together at a central place, or to send representatives, to confer. Without such a conference he did not think it was possible to go very far. If they could get over the financial difficulty, he believed that professional union would be one of the best things that had ever taken place in the profession.

The resolution was unanimously passed by the meeting:

Place of next Meeting.

On the very kind invitation of Mr. Lepper the Association unanimously resolved, the requisite motion having been proposed by Mr. Hurndall, and seconded by Mr. Flanagan, to hold the next (the summer) meeting at Aylesbury, on the first Friday in July.

The President of the College and the Council.

Mr. HURNDALL said they had the honour of having the President of the Royal College as one of their members; and he believed he would be seeking re-election on the council. It had occurred to him that it would be a grateful act on their part to issue a circular asking other veterinary medical associations to support Mr. Jas. Simpson.

The PRESIDENT proposed "That this Association nominate Mr. James Simpson for re-election as a member of the council of the Royal College, and ask the other Associations to support him as far as they possibly can, so as to secure his re-election."

Mr. HURNDALL seconded, and the motion was carried with enthusiastic unanimity, and briefly acknowledged by Mr. James Simpson.

Mr. HUNTING showed a very interesting photograph of a supposed fracture of the first rib.

Presidential Address.

Gentlemen,—It is customary for the presidents to choose for their inaugural address topics of general rather than exclusively scientific interest, but in following this custom I find it difficult to select a subject which has not already been touched upon by able hands. As our time is limited, I will confine my remarks to veterinary medical societies, although I fear what I have to say about them may be considered like a thrice told tale. Judging from the accounts of their various meetings given in our professional journals, I consider they are very popular. Perhaps some may differ from this view on the score that the aggregate attendance at the meetings represents only a very small proportion of the whole profession, but when we consider the difficulties which the great majority of our professional brethren experience in getting away from their practices, the wonder is that the meetings are so well attended. The reason for their popularity, however. is not far to seek, and is to be found in the benefits which the members derive from them. Among other things, they acquire in the pleasantest way possible much useful medical and scientific knowledge. Not only are they benefitted at the meeting itself, but also by the social chat before and after it. They then hear their neighbours' troubles with cases and clients, and how they overcome their difficulties; or may pour their own perplexities into the sympathetic ear of a professional brother who may suggest a remedy.

Besides the reading and discussing of papers on scientific subjects, the exhibition of morbid specimens, etc., I should like to see in this Association, occasionally at least, a further development of our usefulness. I cannot better illustrate my meaning than by referring to the letter of the Lincolnshire Veterinary Medical Society on "Grunting." To assist in elucidating and determining the pathology of his dtisease, if I may so term it, a horse, or horses, grunters, could have been procured, tested in the presence of the members, then slaughtered and the *post-mortem* lesions, if any, observed and recorded. This would serve as an object lesson of great value to the members present. I say to members present, because it must always be borne in mind that through the medium of our periodicals, in our papers and discussions on them we speak to a much larger audience than is assembled in the four walls of this room; whereas by experiments such as those indicated the advantages are confined to those who witness them. They see the animals, note their condition, distinguish the sounds, and also the *post-mortem* appearances, and all this in a better way than could be described by the cleverest pen or pencil. To carry out these experiments requires funds, and this a point which I think deserves some consideration as to how much or how little could be devoted to these purposes.

There is another matter to which I wish to direct your attention, and it also has relation to the funds. As a man's character is frequently judged by the company he keeps, so also is a society's by the objects which it endeavours to attain. The aims and objects of this Association are high and worthy, but I think it might with honour to itself and advantage to its members widen them a little by identifying itself with another of a purely philanthropic character, I allude to the National Veterinary Benevolent Society. This Society was

formed, as most of you are aware, 31 years ago, for the purpose of raising a fund to be devoted to the relief of such of its members as fell into distressed circumstances, their widows or families. It was formed in conjunction with another of like principles but for a different purpose, viz., the protection of its members from unjustifiable and oppressive lawsuits, by giving them professional and pecuniary assistance and support. Of this latter society I shall at present say nothing, beyond recommending it to your favourable notice. I would, however, recommend this Association to become identified with the Benevolent Society by making a small donation, say £20, to it. In return we should obtain in perpetuity a voice and vote in the distribution of its funds. It has done good work in the past, although not so extensively as its founders would have wished, owing to the limited number who have joined it. It is true that cases requiring assistance may not frequently be brought to the notice of the profession, but the number of applicants to this Society for relief has fully demonstrated the necessity for its existence, and also for a wider membership. Besides grants of money, the Society has been able to assist in other ways. Some years ago the son of a deceased veterinary surgeon, being desirous of following his father's profession yut unable to do so for want of funds to pay his college fees, applied to the Society, although not entitled to its benefits. They made a representation to the different schools when they all, I believe (there may have been one exception) generously offered to educate him free, and already the orphans of three veterinary surgeons have been, through their influence, so educated. Now I think you will all agree with me that a society doing this good work is worthy of support. Some may think its officers have been a little remiss in not keeping its claims constantly before the notice of the profession, but they have carefully husbanded its funds, and have themselves defrayed all the working expenses. It is owing to this fact that it has now an invested capital of over £3,000. As I before stated, the number of applicants for relief have fully demonstrated in the past the absolute necessity for such a society, and as the struggle for existence is yearly becoming keener, owing to competition and increased membership, we fear that the claims upon it will in the future be increased rather than diminished. It hehoves us therefore as an Association, and as members of an honourable and learned body, to carefully consider this matter, and *noblesse oblige*, to act up to the highest standard.

While it is our ambitious desire for the profession to attain a place in the fore front of learned and scientific bodies, we should not neglect those duties which the thoughtful consider are due to the unfortunate, ever remembering that by making provision for the probable wants of the widow and fatherless we add to our own as well as their happiness, and also tend to elevate the status of our profession in the eyes of all good and right thinking people.

Mr. WALKER proposed and Mr. WHEATLEY seconded a very hearty vote of thanks to the President for his address, and the same was carried by acclamation.

The PRESIDENT said a word of cordial thanks, and the members, who were joined by Messrs. Giles Ayres, R. L. Clarke, J. A. Craft, W. Bonney, E. K. Deacon, Mus. Bac., and other gentlemen, adjourned to the new coffee room of the hotel for the annual dinner.

The Dinner,

To which over 30 gentlemen sat down, was served in the style for which the hotel it famous.

The CHAIRMAN gave the loyal toasts. The Prince of Wales, he said, took great interest in agriculture and sport, and altogether fulfilled the ideal of a country gentlemen, independent of his positton as heir to the Throne. The veterinary profession had good reason to drink that toast with enthusiasm,

for his Royal Highness was a patron of the College, and frequently attended meetings there, taking a great personal interest in the profession.

Mr. LEPPER submitted the next toast, that of "The Sea and Land Forces," and said no words could express the gratitude they felt towards the Services. He hoped the navy would be so strengthened that it would exceed the navies of any two other powers; and our army in point of efficiency, discipline, and equipment, could equal the large armies of the continent, although, of course, not in numbers. They were glad to welcome back the Ashanti expedition from their bloodless campaign, the organisation of which had been very thorough and efficient. A notable feature was our volunteer force, which now numbered 200,000, and there were many thousands of men in the prime of life who had served as volunteers, and would quickly rejoin the colours if required. He had himself belonged to the Bucks Yeomanry for 20 years, and was certain that if the Yeomanry regiments of England were only drilled for one month they would equal in every respect the regulars. He coupled with the toast the name of Quarter-master Giles Ayres, of the Berks Yeomanry, who was an old yeoman and an old vet., and had served his country in many ways.

Quarter-master AYRES, responding, said that after the recent remarks of the Commander-in-Chief they might feel satisfied that the navy and army were in a good position.

Mr. DOWELL proposed "Success to the Royal Counties' Veterinary Medical Association" in a neat speech. Having been present at the meeting that afternoon, and then at the dinner, there could be no doubt of the success of the Association. He felt deeply indebted to his friend, Mr. Rogers, for having asked him to come there that day, because it had not only enabled him to spend a pleasant afternoon, but also to see the working of one of the chief veterinary medical associations outside London.

The PRESIDENT responded, and said he had the good of the Association at heart, and certainly should not spare himself in any way to promote its success. He must remind them that very much of the success of an association depended upon its permanent officers; and he thought that Association from its commencement had been one continued success. Some meetings might not have been attended so well as others, but when they considered the earnest attention that veterinary surgeons paid to their business, and the enthusiasm which they showed in the profession, he thought they attended very well. Anything in his power to make that Association a success he should not fail to do.

Mr. HUNTING ably proposed the next toast, that of "The Veterinary Profession." In a mixed audience of that kind, he said, one who did not know the visitors might be a little puzzled as to how best to treat the subject of that toast; but he was saved that trouble, because every visitor with them that day was a sporting man, and to sporting men there was very little necessity to insist on the good work done by members of the Royal College of Veterinary Surgeons. The members of the profession looked to the owners of horses, cattle, and dogs for appreciation of their work. The individual public always treated them well, and thoroughly appreciated the services they were able to render. But as a collective body they looked to the State for some appreciation too. There was, a short time ago, a State Department of Veterinary Surgeons, which was "run" by veterinary surgeons, and its work was well done. Unfortunately—and as a good Radical he said it with a sense of shame—a Liberal Government deposed them from their proper place, and put at their head retired military and naval officers. But time always brought its revenges. They had been trying now some 2½ years at only one disease—swine fever—and they had actually grown and developed that disease, and increased its spread in the country; and they had killed, under the guidance of non-profes-

sional men, more pigs than the disease itself. A short time ago the new Minister of Agriculture invited the Local Authorities to send representatives to a conference; and every one of those local representatives told him that the Board of Agriculture had failed miserably, owing to the incapacity of the officers and to the delay incurred by their arrangements. He was glad to see that, only within the last day or two, Mr. Walter Long had seen the error of his ways, and was now going to treat the local veterinary surgeon as the only man to whom they could trust for the stamping out of disease. When he had diagnosed the disease he would act at once, and not as heretofore be a mere "tripe-washer" to send the "tripe" up to London to have it verified. They could not lock the stable door then. The veterinary profession, resuming its proper position in the state, and having always maintained its proper position with the public, he thought was now in a position for which every member should be grateful and proud. He had to couple with that toast the name of Mr. James Simpson, the President of the College. He did so with very great pleasure, because he himself knew something of the difficulties of the position, and also because, having seen a good deal of Mr. Simpson's ways, he knew that he was one of the most energetic Presidents the College had ever had. He spared himself never, and he possessed a most enviable tact in the way in which he did his work.

Mr. SIMPSON returned thanks. He assured them he appreciated very highly the honour of the position he occupied that night as the mouthpiece of the veterinary profession. He called to mind that last year the gentleman who had now proposed that toast occupied the position of President of the College, and it was in their recollection that he made a very excellent speech. It was the duty of every member of the profession to try and keep it to the fore. The Council did him the honour to elect him as President, and he was bound to say he agreed with Mr. Hunting in one thing. He had been far too generous in his remarks with regard to himself (the speaker), but he had certainly told the absolute truth when he said that he would, during the time he occupied that honourable position, endeavour to do his level best to obtain for the profession the recognition it undoubtedly deserved. Mr. Hunting had referred to a position which was once occupied by the profession, which they claimed to be honourable in the State. He was in a position, perhaps, that night to say something which they had not heard before. They might remember that some time ago the Council of the College decided that a deputation should wait on the President of the Board of Agriculture, to represent to him the views entertained by the members of the profession. Mr. Long did not see his way to receive a deputation, and perhaps he was wise in that, because, as they knew, the reception of a deputation meant publicity; and Mr. Long, perhaps with a desire to assist the profession, was anxious to hear from an individual the views of its members. The Council decided that he (Mr. Simpson) as the President of the College, should wait on the President of the Board of Agriculture, and he did so. Although he was not at liberty to tell them all the details until he had reported to his Council, he did feel at liberty to tell them that he was received most courteously by Mr. Long, and that he gave him the most patient and considerate attention he could possibly have hoped for. When he told them that it occupied him nearly an hour to tell him his tale, they would understand he had a good deal to say. When a Minister of the State could afford to give an hour to an individual, he must, indeed, be considered a patient and an interested man. He laid before Mr. Long all, or nearly all, the grievances entertained by members of the profession. The Council desired him to call Mr. Long's attention to three facts, viz., that the Veterinary Department had been practically abolished; that there was no professional man as director at the head of that department; and that the staff at the Board was insufficient

to deal with the diseases which were raging at the present time. He drew Mr. Long's attention to the fact that for 12 years, down to 1878, the Privy Council had a veterinary department which was presided over by a layman. The failure of the Department then to cope with disease was so apparent to the Duke of Richmond, that he determined, when he came into office, to appoint a veterinary director with all the necessary staff; and the result of that change was well-known not only throughout England but throughout the world. It was that cattle plague, pleuro-pneumonia, sheep-pox, and other diseases were practically swept away from our country. He (the speaker) ventured to compare the condition of affairs now with those under the veterinary director, because the changes of which they had now so much reason to complain, took place after the retirement of Professor Brown from the Department. No sooner did Professor Brown retire, and a lay director was appointed to preside over what was called "The Animals Division," than swine fever, glanders and farcy, rabies, and other diseases unmistakably increased enormously. Even the authorities at the Board of Agriculture would not deny that fact. The monthly statistics proved that from the date of the appointment of a layman to the Animals' Department, those diseases had increased enormously. He must not tell them all that transpired; but he came away from that interview satisfied that they had in Mr. Long a very different man to what they had in Mr. Gardner, and he confidently believed that Mr. Long would do his level best, because quoting his very words, "it would be futile for any department of the State to deal with disease unless we had not only the assistance but the very hearty co-operation of the members of your noble profession." When a Minister of the State used those words, and told him theirs was a profession he admired and respected, and that amongst its ranks he could reckon a large number of his personal friends, he felt sure it was Mr. Long's intention to do his best to sweep away some of the causes of the irritation which existed now in the veterinary profession as against the Board of Agriculture. Mr. Simpson then referred to the approaching election of members of Council, thanking those present for the support offered him in his candidature, and assuring that if he were successful he would do his best in the interests of the profession. The duties of a councillor and of a president now were very different to what they were some years ago, as he showed by giving some particulars of the work of the Registration Committee. He ventured to think that the profession was never in its history more respected than it was at the present time: and he need not remind them that it depended upon the individual members to obtain for it still greater respect. He felt sure he was not appealing to an unsympathetic audience when he asked them to assist their Council in every possible way by doing all they could to bring the profession to the front, and to claim and demand for it that recognition which it undoubtedly deserved.

Mr. HURNDALL, in proposing "The Visitors," said they numbered among their guests that night gentlemen of high social position and associated with "the sport of kings." The presence of such distinguished visitors showed the esteem felt towards the members of the profession. As Mr. Hunting and Mr. Simpson had pointed out, the failure to perform the necessary duties for the protection of the stock-owning public by the late Government was greatly to be regretted. He coupled with the toast the name of Mr. Bird, who represented one of the best racing establishments in England.

Mr. BIRD suitably replied to the toast.

Mr. ROWE gave "The President and Officers of the R.C.V.M.A." in a neat speech, and Mr. Walker and Mr. Hurndall suitably responded.

The enjoyment of the evening was greatly enhanced by songs from Messrs. Bonny, Hurndall, Cottrell, Pitchford, Ayres, Owen, and Wheatley, and recitations by Mr. Maidment, and piano solos by Mr. Deacon.

BORDER COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting of this Association was held at "George" Hotel, Penrith, on Friday, 13th of March. There were present:—Mr. John Armstrong (President Elect), Penrith; Professor W. O. Williams, Edinburgh; Mr. H. Thompson, Aspatria; Mr. Lindsay, Dumfries; Mr. Garnett, Windermere; Mr. Carter, President of Lancashire Association; Mr. McKie, Carlisle; Mr. Threlkeld, Kirkoswald; Mr. Martin, Appleby; and Mr. J. W. Hewson, Carlisle, Secretary.

In the absence of the President (Mr. Soulsby), Mr. THOMPSON formally moved that Mr. Armstrong occupy the Presidential Chair for the ensuing year. He congratulated Mr. Armstrong on his recovery from a very severe accident which he met with a few months ago.

Mr. ARMSTRONG, in taking the Chair, thanked the Association for the honourable position to which they had elected him. They had done a lot of good work in the past, and he hoped that in the future they would keep the Association up to the same level.

Mr. GARNETT moved that the Association pass a vote of condolence with Mr. Pears, Penrith; Mr. Thompson, Aspatria; and Mr. Armstrong, Penrith, for recent bereavements in their families.

Mr. HEWSON seconded the motion, which was unanimously agreed to.

The PRESIDENT and Mr. THOMPSON briefly expressed their thanks, the former observing that Mr. Pears had suffered a very great loss, two of his daughters, up to womanhood, having died, while a third was very ill.

Mr. THOMPSON made a statement as to the finances of the Association, from which it appeared that, if all outstanding subscriptions were paid in, the Association would have a balance of £15 10*s.* 7*d.* to the good, clear of all expenses. At Mr. Thompson's request, a resolution was passed that the accounts be yearly audited by the President.

The PRESIDENT said they had received notice of the next election of Councilmen, and he would like to have the feeling of the meeting as to what should be done. Mr. Thompson was one of those who would have to be re-nominated.

Mr. GARNETT proposed that the Association nominate Mr. Thompson for re-election. They all knew his views, which were always for the advancement and the good of the profession. He had attended well to his duties, considering the distance he had to go. It was a great drawback to provincial veterinary surgeons that they could not possibly attend every meeting. Still, he did not think, as the bye-laws of the College stood at present, that they should be in regular attendance, unless some radical change took place. It was a great draw on the country members to have to pay £5 or £6 in expenses every time there was a meeting. Some regulations should be made by which the members should be paid a certain sum towards their expenses.

The PRESIDENT seconded Mr. Thompson's nomination, and said he happened to know his views on certain subjects, and the one great thing he was backing up was distribution over the various districts, which was what the Association ought to go in for in connection with the Council. They were not sufficintly represented in the north.

Mr. THOMPSON thanked the Association for the honour which they proposed. He saw he was one of the six out of fourteen retiring members who had been balloted for to return along with Professor McCall and Mr. James Simpson. He had not attended the meetings of the council as regularly as he would have liked, because he had various offices outside of his profession which took up a great deal of time. He was therefore not in a position to devote the time and attention to veterinary politics that he would like to do. He had said little at the meetings but had voted for what he considered the best measures. He had come to the conclusiôn that if Mr. Balfour would step

down from the House of Commons to the board room of the Royal College of Veterinary Surgeons, and put on the gag and limit the time of speechifying, he would do a great deal of good. He did not think the profession was properly represented on the council board, nor would it be so until they had electoral divisions and he would like also to advocate the payment to members of, say, second class railway fare to and from London when engaged there on council business. A country practitioner could not afford to spend £30 or £40 a year in expenses at these meetings, and in addition having to travel something like 600 miles and take two or three days to it. He questioned very much whether those gentlemen living in London and the immediate vicinity would attend the council meetings as often as they did, if they had to leave their work for two or three days, four or five times a year, and be out of pocket £5 or £6 a year. It was an easy matter for them to jump into a penny 'bus, go to the meetings and get back home at night. Another matter he would like to draw attention to was the manner in which motions were carried at the council meetings. If a motion was passed in committee it came up afterwards at the general board and it was again discussed and voted on. He submitted that if a motion was carried by a majority it ought to be there and then made law or left over to the next quarterly meeting. He did not see the force of wasting all the time in committee and at the general board, when the subject had to come up again in fourteen days to be confirmed, and if the parties were not there to support it, those who were oppposed to it attended and the motion was thrown out and lost. This wanted reforming. He would also recommend that the Principals of the teaching schools be ex-officio members of the board. They should not be subjected to the vote; they were required on the council for expression of their views and to advocate measures for the efficient teaching of students. He was not in favour of other members of the college teaching staff being on the council. There were too many from the London College on the council now. With reference to the educational question, that had been going on for a long time. He thought they were going a little too far and making the education too expensive for country veterinary surgeons and to raise the curriculum to four years was a great drawback for original earnest men joining the profession. What with the microscope and bacteriology, he was afraid they were forgetting to teach the hand and eye together in real practical work. They were forgetting observation, originality and practicability, which were the three great points—the foster-mothers of science. Look at the last examination at Christmas, when only 18 students from the four colleges passed their first professional or A. examination, and compare with the examination of May 1892, when 110 passed their first professional. If these 18 students are what the 22 examiners have to look forward to, he was afraid it was like killing the goose that laid the golden eggs. He regretted that from having so many occupations he could not see his way clear to offer himself for re-election, if the North of England was to be represented, they had good men in Newcastle, or they might select one from the border counties if they thought proper.

Professor W. O. Williams said the Scottish Metropolitan Association decided last week to support Mr. Thompson as a North of England man; and they also decided to ask the Council to devote so much money to the payment of travelling expenses. He did not agree with Mr. Thompson in the suggestion that there should be only one from each college on the Council. His father and he had made it a matter of honour that they would never go to a Council meeting together if they could help it, so as to have a double vote. It was only in a matter of emergency that they did go together, and he did not think that they had been twice to London together during the past two years. He knew that Mr. Thompson was not driving at the Scottish colleges,

Mr. THOMPSON said, in conclusion, that under the circumstances he would take time to consider whether he would stand or not.

Mr. GARNETT'S motion, being put by the President, was carried unanimously.

The SECRETARY read a letter from the South Durham and North Yorkshire Association asking the support of the Border Counties' Association in favour of their nominee, Mr. J. E. Peel, F.R.C.V.S., J.P., who retired from the Council, but offered himself for re-election. The Association felt that in Mr. Peel they had an able representative of provincial veterinary surgeons in the North of England.

Mr. HEWSON moved that this Society endeavour to amalgamate with the South Durham and North Yorkshire, the Scottish Metropolitan, the Lancashire, and the Northumberland, in order to secure the election of their respective candidates.

Mr. LINDSAY seconded the motion, which was agreed to.

On the motion of Mr. THOMPSON, seconded by Mr. HEWSON, and supported by the PRESIDENT, it was agreed to contribute £2 2s. towards the memorial which is being promoted for the late Professor Walley, who had been one of the hon. members of the Association and had given them several papers.

Mr. J. Donald, Wigton, had given notice of a motion for dispensing with the services of a private reporter at the Association meetings and throwing the meetings open to reporters of the professional journals. Mr. Donald was unable to attend the meeting, and on the motion of Mr. GARNETT, seconded by Mr. MCKIE, it was decided not to grant Mr. Donald's request that the motion should again be postponed. It was, consequently, struck out.

The President's address was the next subject upon the agenda; but the PRESIDENT said he had not prepared an address. These addresses, to his mind, simply meant thrashing out old things over and over again. He determined, instead, to bring one or two matters before the attention of the members. One was in connection with the Royal Society for the Prevention of Cruelty to Animals. There had lately occurred in the district one or two cases which showed the desirability of veterinary surgeons combining in their own defence. About three months ago one of the inspectors of the R.S.P.C.A. attempted to dictate to a veterinary surgeon as to whether a certain horse was lame or not. That inspector, he believed, was by trade a tailor. Yet he considered himself fit to dictate to a qualified veterinary surgeon. But he found his level in the court, when his case was dismissed. It was really a case of old standing ringbone. He next referred to two cases of umbilical hernia. The first case was in January, 1892, when Mr. Hewson, who was then his (the President's) assistant, was called to attend a yearling filly. She had a large piece of bowel through, and there was a considerable amount of local swelling. An abscess formed, and burst on the 25th January, and discharged ingesta until February 3rd. After that the wound healed, the hernia disappeared, and the mare was now a good useful brood mare. The treatment consisted simply of clealiness, a strong antiseptic being used. Professor Walley's favourite liniment was used, equal parts of turpentine and rape oil, and two drams of creasote to the eight ounces, and round the swelling the ordinary white liniment. An analagous case came under his notice on the 28th November, 1894. A mare, the property of Mrs. Bell, of Thomas Close, was very stiff, and had a considerable amount of swelling under her belly. At first, he did not detect the hernia owing to the swelling, and it was only on his second visit that he found an opening. He pressed the bowel back, and bandaged the place. The mare suffered much pain, and her temperature rose to 107°. She was treated with sedatives in the ordinary way, but he could not relieve the pain. The result was an abscess which burst, and ingesta was discharged for four days, a considerable quantity coming through the opening—at least four quarts.

Remembering the first case, he treated this one in exactly the same way, except that the first case was not feverish. That mare went on well, and had now gone to London as a trammer. He considered that these cases were unique.

Mr. THOMPSON said he had met with several cases of umbical and ventral hernia. It was rather unique to have a common opening into the bowel and make such a nice recovery. He thought it was a matter which might be deferred for discussion at next meeting, so that they might consider this subject in the meantime.

Mr. HEWSON said he distinctly remembered the first case mentioned by the President. It was a yearling filly, and was noticed from birth to have umbilical hernia. He was suprised when the abscess burst to find ingesta coming distinctly from the bowel. He thought the discharge would amount to three quarts a day. His first impression was that the case was hopeless. The feed was regulated to a certain extent, and was either boiled or scalded, and the dressing was a very stimulating one.

Mr. CARTER recalled a case in his experience of ventral hernia, ingesta coming from the wound. The animal died, however. He never heard of their recovering before.

Mr. LINDSAY said he attended a two-year-old colt which had burst an abscess below its belly. He told the owner he might as well send the animal to the knacker's yard. The man kept the horse and treated it, and within three weeks the wound was healed. Another case was from Mr. Graham, of Harelawhill, and was a foal which had umbilical hernia. He promised to put a truss on it, but in the interval it burst. Ingesta came from the opening. He advised the owner to leave it alone, and the wound healed up and the rupture disappeared.

Mr. THOMPSON said last Thursday a hunter stuck himself on a post in a fence, half-way between the sheath and the inside of the thigh ; the skin was not broken. Next morning, after a gallop, the bowels protruded and extended under the skin along the flank and belly. He manipulated them back and got the swelling reduced, put on bandages with horse-hair pads, and yesterday morning the horse was doing nicely, but how the case would end he could not tell.

Mr. GARNETT said to his mind it was a question whether the abscesses were due to hernia or not. He knew a case where a large abscess was formed which might be taken for umbilical hernia. The animal was eight or nine months old, and was off its food. He opened the swelling and a pint of thick matter came away. He treated antiseptically and syringed once or twice a day. There was no opening into the bowel, and in the course of a week or ten days the wound was entirely healed. Were they really causes of hernia, or did some abscess form at the point of the umbilicus and connect in some way with the coats of the intestine, and really in these cases was there protrusion of the intestine through the muscles of the belly ?

The PRESIDENT said in the cases he had quoted it was direct hernia.

Mr. THOMPSON : The ingesta proves that.

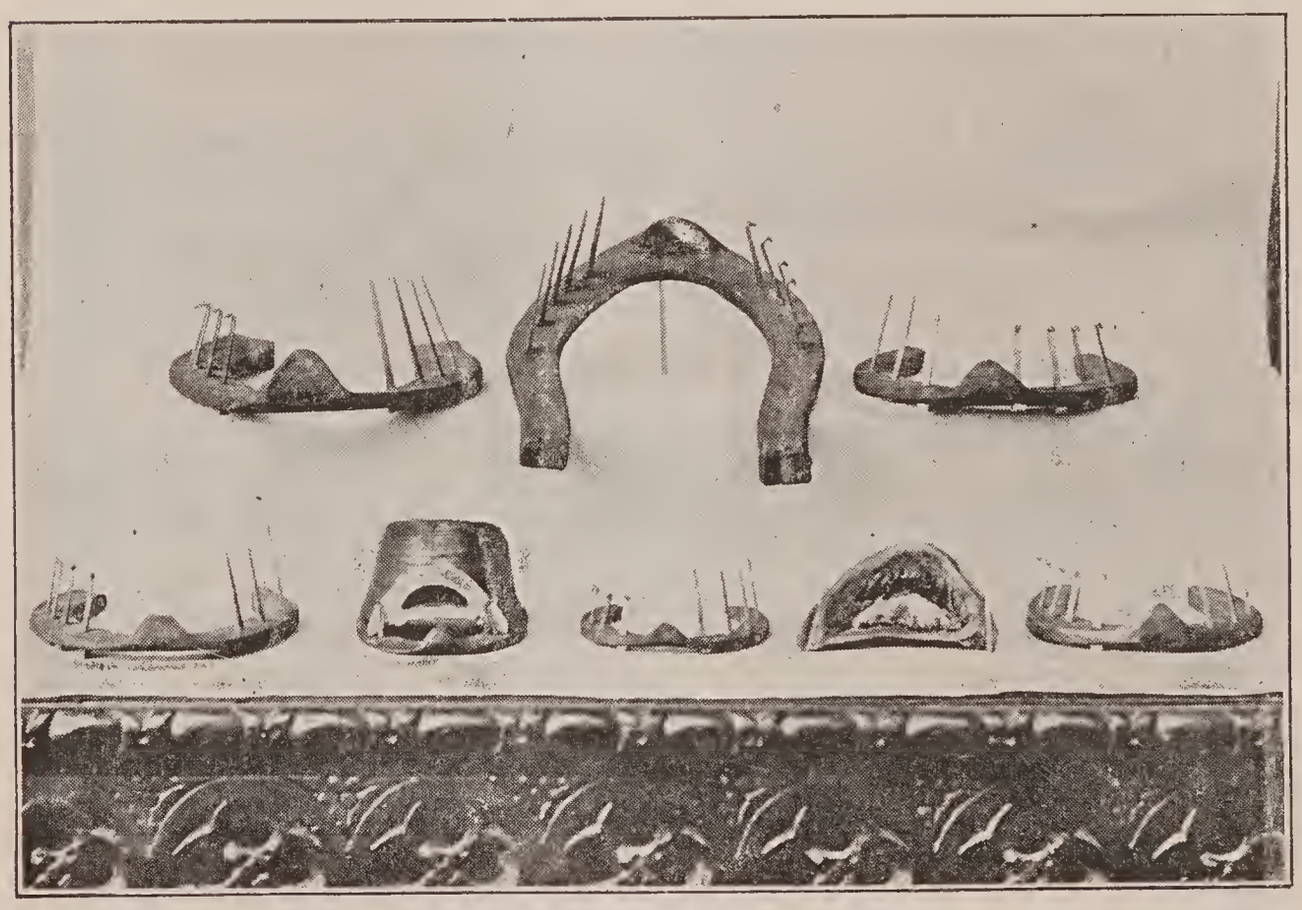
It was agreed that the subject should be left over for further discussion.

The adjourned discussion on Mr. Park's paper on "Schirrous Cord" was also postponed, Mr. Park being absent in Paris, where he is undergoing the Pasteur treatment for an injury inflicted by a dog which died of dumb rabies.

Mr. THOMPSON, Aspatria, then introduced his subjects on horse-shoeing and castration and said : I have two objects in bringing this matter before you. The case is this. On July 25th, 1895, Mr. Nicholas Bird, shoeing smith, Workington, was sued in the county court of that town for the full value of a pony said to have been "*ruined for life* by five nails out of six being driven too near the sensitive parts." It was stated in evidence that the pony was shod on April

19th, yet no complaint was made until May 21st, 12 days afterwards; when the shoe was removed nothing was seen or found in the foot. On July 23rd, Mr. Bird asked me to examine the pony in company with Mr. Charles Ward, M.R.C.V.S., and on July 24th, the day before the trial, or 85 days after the pony had been noticed lame, we had the shoe taken off the hind-foot and found a good strong hoof, the crust and sole being overgrown. The sole and ground surface of the wall were slightly pared, but there were no indications of the foot having been searched for prick or "gravel," nor yet were there any traces of old nails noticeable, the only holes in the crust being those belonging to the shoe we had just removed. The pony was going sound, but had bony enlargements and partial low ringbone on the inside of both pastern joints.

The first point I want to bring before you is the direction of the nail holes in the shoe and the nails in the hoof. In court a shoe was handed to me with some nails. On putting the nails into the holes in the shoe their points



inclined inwards, and looked rather dangerous, just like those specimens before me. In my evidence I said "I saw nothing amiss with the direction of the nails or the nail holes in the shoe. The nails must incline inwards in keeping with the angle of the foot, so as to get a proper hold of the crust." Mr. Soulsby, sen., Whitehaven, also gave evidence for the defendant Bird, and in his cross-examination said that "the nail holes in the shoe and the nails themselves inclined obliquely outwards." I was astonished to hear this, as it appeared to be against the common law of mechanics. Referring to Dr. Fleming's prize essay on Practical Horse-shoeing, which was placed in my hand on leaving the court, I was astonished to see a diagram showing the direction in which the nails had to run, and also the following instructions:— "The nail holes may be stamped *coarse* in order to take a short but solid hold of it by driving the nails *obliquely outwards*, as figure 19; but on looking at the figure I found the nail hole on the *inside margin of the web of the shoe* —the Arab style of nailing. On reaching home I hunted up some other

writers, and was still more surprised to read in Fitzwygram, chap. 3, para. 974, that "the nail holes should be punched rather nearer the inside of the shoe, and should be brought out at the upper side with a slight inclination *outwards*, so as to diminish the chance of pricking."

Now, when men like Dr. Fleming and General Sir F. Fitzwygram, both well known writers, tell us that the nail should be nearer the inside margin of the web of the shoe, and incline obliquely outwards, it is time, I think, to draw attention to the practical fact that such is not the case. Professor Williams says "the nails should be as nearly straight up and down as possible." Mr. Hunting, in his excellent little work on horse-shoeing says the nails should be as nearly vertical as possible. Professor Brown, in his pamphlet on the horse's foot and shoeing, on the last page, gives two figures of a section of the foot; one represents the Arab style with the nail-hole in the inner margin of the shoe web, and the nail going obliquely outwards; the other shows the modern style of shoeing, the nail-hole being placed on the outer margin of the shoe, with the nails nearly vertical, inclining slightly *inwards*. Now, gentlemen, since the trial I have examined some scores of old shoes picked up from scrap heaps in blacksmiths' shops, and have also made sections of the feet with the shoes on, some of which are before me now, and for each single nail in a vertical direction, I found 99 inclining *inwards*, but none inclining *outwards*. These photographs and specimens will testify to this. If any of you will take the trouble when in a shoeing forge to pick up a shoe and insert a nail, you will find it to incline inwards; it must do so, otherwise no hold would be got of the crust. Now I would like your opinion on this point. My second object in bringing this before you is this, as the case went against the shoeing smith who was mulcted in heavy damages, I would suggest that veterinary surgeons owning shoeing shops, and shoeing smiths should form a mutual defence association, as they know not the moment they may be proceeded against, even when they have exercised due care in carrying out the work entrusted to them. This leads me to the castrating case lately tried in this town, Penrith, in which a veterinary surgeon and a member of our Society was sued for damages on account of the descent of a colt's bowels after castration, but fortunately without success. It is somewhat analagous to the shoeing case. We may take every pains and care in doing our work, yet, unfortunately, have an accident and be subsequently placed with an unpleasant and costly litigation. These two cases, in my opinion, ought to be quite sufficient to induce members of the profession to amalgamate for mutual defence, and I would advise all practitioners, especially the younger men, to join the Manchester Mutual Defence Society so that they may have every assistance in time of need.

Professor WILLIAMS said, with regard to the nail-holes, the nails should go in straight, but on account of the point being bevelled, it turned outwards and made a semi-circle.

Mr. CARTER said he had been possessor of a shoeing-forge at one time, and he agreed with Mr. Thompson. The nail went in an oblique manner inwards, following the line of the foot. Some nails would have a tendency to go outwards direct,

Mr. LINDSAY mentioned cases in which veterinary surgeons had been blamed for causing the death of valuable animals, and he agreed that steps should be taken to join a mutual defence society. If the veterinary surgeon got hurt, would clients compensate them for their injuries?

Professor WILLIAMS mentioned a case in which a race horse, in course of castration, fractured the femur, and it was found that the horse was suffering from osteo porosis. That was a disease which they did not know all about yet.

The PRESIDENT thanked Mr. Thompson for his communications. It was

absurd to say that the nail-hole should be made in the inner side web of the shoe. He failed to see how veterinary surgeons should be liable in accidental losses of animals. He asked Professor Williams if he suggested that there was a continuation of osteo porosis from the prick in the foot (which the Professor had mentioned) to the various bones in the leg of the horse?

Professor Williams said that was his impression

The President said he could call to mind two cases which had bearing upon this. One was the case of a horse which, when being castrated, made a sudden plunge and snapped his thigh. It was found that the whole of his pelvis was soft. Another case was a steeple-chaser named Tally-ho, which bumped his leg badly, and later on he appeared to have a bad attack of inflammation of the bowels, and died suddenly. *Post-mortem* examination showed that he had four or five ribs quite softened, and also both femurs softened. To what extent accidents of this kind could be sympathetic it would be interesting to know.

The letter was read from Professor Macqueen regarding the union of societies, in regard to the forwarding of representatives to the National Professional Society.

It was agreed that the President, the Secretary, and the Treasurer should be a committee to confer with other societies and report as to the best plan.

A letter was also read from the Lincolnshire Association with regard to grunting in horses, and its relation to sonndness. The letter was laid upon the table.

A vote of thanks to the chair concluded the meeting.

The annual dinner was afterwards held, being provided by an old friend, Mr. F. Armstrong, M.R.C.V.S., mine host of the "George," and his charming wife. The tables were beautifully decorated. An enjoyable evening was spent in toast and song.

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

The fourteenth annual meeting of this Association was held at the George Hotel, Grantham, on Thursday, February 28th, the president, T. A. Rudkin, Esq., Grantham, in the chair. There were also present Mr. J. Clarkson, president of the Yorkshire V.M.A.; Captain Russell, J.P., hon. treasurer; Mr. E. C. Russell, Grantham; W. H. Brooks, Leadenham; J. Mackinder and J. W. Gresswell, Peterboro'; Chas. Hartley, Lincoln; F. L. Gooch, president of the Midland Counties V.M.S., Stamford; Hugh Kidd, Melton Mowbray; B. Freer, Uppingham; and J. A. Robson, hon. secretary, Market Deeping.

The minutes of the last meeting having been taken as read, the Secretary read letters of apology for non-attendance from Dr. Fleming, Professors Pritchard, Macqueen, and McFadyean, and Messrs. J. A. Clarke, F. B. Eve, Captain Hayes, James Smith, T. E. Smith, and F. Somers.

Grunting.

The Secretary said he had received communications *re* grunting from the Yorkshire, Lancashire, Central, and Midland Societies. The Yorkshire and Lancashire were in accord with them on the question, but the Central, by twenty-two votes to three, took the opposite view. The Midland Counties, owing to want of time, had adjourned the subject to their next meeting. He thought that in the discussions on the question at the Central Society, Professor Macqueen had rather got off the track in devoting so much attention to the circular which he had sent to the different societies, instead of confining himself to the resolution of that Association. However, he supposed the

principle of "a weak case, abuse your opponent's attorney" applied to veterinary discussions, and had been adopted in this instance.

A letter was read from the Secretary of the Eastern Counties Society, stating that the National Veterinary Society proposed to visit Yarmouth in the summer, and asked whether the Lincolnshire Society would be willing to assist in entertaining them. After discussion it was decided that the Treasurer (Captain Russell) and Mr. Gooch should be asked to consider the subject and confer upon it with the Eastern Counties Society. It was generally felt that the state of the funds did not warrant a grant from the Society towards it.

The question of subscribing to the Walley Memorial Fund was considered, and it was decided to leave the matter to the discretion of individual members.

Election of Officers.

Captain RUSSELL proposed the election of Mr. H. Howse, of Lincoln, as president for the ensuing year, as he was sure that Mr. Howse was a gentleman with many qualifications for the post, and that he would fill the chair in an exemplary manner. This was seconded by Mr. BROOKS and adopted unanimously, and the Secretary was directed to write to Mr. Howse, informing him of his election.

The retiring President, Mr. T. A. Rudkin, with Mr. J. Mackinder and Mr. F. H. Reeks, were elected vice-presidents.

The Treasurer, Captain Russell, and Hon. Secretary, Mr. J. A. Robinson, were re-elected.

The TREASURER read a statement of accounts for the past year, showing a balance in hand of £16, and there was a sum of £11 owing to the Society for overdue subscriptions, most of which he hoped to get in. The accounts were passed, with a very hearty vote of thanks to Captain Russell for the time and energy he had devoted to the affairs of the Society.

Mr. HARTLEY proposed that Mr. Tom B. Bindloss, of Long Sutton, be elected a member of the Society. This was seconded by the PRESIDENT, and carried. Captain RUSSELL proposed the election of his son, Mr. E. C. Russell, of Grantham; seconded by Mr. BROOKS, and adopted.

Mr. HARTLEY then read the circular letter which he had received from Professor Macqueen in reference to amalgamation of the various existing societies with the National Society. Mr. Hartley supported the propositions contained in Professor Macqueen's letter, but owing to want of time to fully discuss the subject at that meeting it was resolved that the officers of the Society form a committee to consider the matter and report to the next meeting.

Mr. B. FREER, M.R.C.V.S., Uppingham, read the following paper on—

"SOME NON-CONTAGIOUS SKIN-DISEASES OF THE HORSE."

Mr. President and Gentlemen,—Towards the end of the year 1895 our worthy Secretary paid me a short visit, and so pleased was I with his company that in a moment of rashness I promised to read a paper at the next meeting of the L.V.M.A. Whilst looking around for a subject it occurred to me that a few remarks on some non-contagious skin diseases of the horse might bring about what every essayist anxiously looks forward to—a good and profitable discussion.

The first and by far the most important of this class of skin diseases to which I shall draw your attention is that known as eczema. Professors Robertson and Williams both speak of four distinct varieties, eczema simplex, eczema rubrum, eczema impetiginodes, and chronic or squamous eczema. As our clients don't care a toss whether it is squamous or impetiginodes, so

long as we can cure the animal in double quick time, it will be sufficient for our purpose to-day to speak of eczema as acute and chronic.

The word eczema is derived from the Greek, and means an outbreak or eruption. The disease is a true type of cutaneous catarrh. It may occur in any part of the body, but in our patients is usually seen on the neck, shoulders, and quarters. If detected at its commencement, vesiculation may be noticed, followed by the discharge of a thin watery fluid. If not checked this runs on to pus formation, and the shedding of epidermis. The irritation and itching are intense. Some animals, if not properly secured, will not only rub themselves raw, but actually tear out pieces of skin with their teeth. We read that this disease may be confounded with mange, but although the symptoms are much allied, and eczema occasionally assumes an enzootic form, the two may be readily differentiated.

One characteristic peculiarity of eczema is its strong tendency to recurrence, hence to use a common expression, "it is as well not to holloa until you are out of the wood," or talk too much about any specific treatment, for you may possibly leave a patient apparently cured and a few days later find him or her as bad or worse than ever.

The causes are chiefly intrinsic, and probably depend on a disturbed condition of the digestive and urinary systems. Curiously enough it is seen under exactly reverse conditions—in animals that are stabled, and fed on dry food, as well as in others when turned out to grass. I have long held the opinion that it is allied to rheumatism, and is due to depraved digestion, and the formation of a poison which should be, but is not, eliminated by the kidneys.

I will now, with your permission, allude to two cases occurring under entirely different conditions, and each proving equally obstinate and difficult to cure. No. 1 was a grey mare, five years old, the property of a clergyman, and being the only offspring of an old favourite had been pampered from birth. When turned out to grass at three years old she rubbed all the hair off her mane and tail; this they treated by washing with soft soap and warm water, and afterwards dressing with paraffin, and then sent her to be broken. On her return she was broken indeed, and the eruption cured for the time, and it took the rest of the year to bring her back to anything like her old form. On the approach of winter she was at once housed, and developed no more eczema that season, but within a week or two of being grassed the following spring it returned with increased severity. She was turned out in a park-like field, and before they fetched her in had not only denuded herself of mane, hair off the tail, and a considerable quantity of skin, but had rubbed the bark of most of the trees, and the paint off all the iron hurdles. She was then sent to me for treatment. I used her as a hack for a time, and whilst in pursuit of my vocation came one day in contact with a gentleman who, without being a member of the profession, combined the callings of castrator setoner, hoof cutter, and general practitioner. He saw the mare, and immediately diagnosed the case as one of mange; he thereupon offered to give me a receipt, which he would not divulge to any other person in the world, that would cure her in 24 hours, or he would eat her, mange and remedy included. We walked together a short distance, and in tones that were meant to penetrate he gave me the following recipe. Get a double handful of bear's foot (the botanical name for this is helleborus niger), and boil in a gallon of stale chamberley. This word puzzled me for a second or two, but having grasped its signification, I asked should it be male or female. He replied that does not matter, but it must be stale, and should be collected in the morning. Rub this decoction well into the skin with a dandy brush and cure is complete. This man has long since joined the majority, and I now hand over the secret to the profession in general and the L.V.M.A. in particular. Needless to say

I did not try it, but the eczema ultimately yielded to treatment, which I will describe later.

Another case, quite opposite in character, was that of a harness mare, the property of a nobleman. She commenced rubbing towards the end of the London season, and mange being suspected was at once sent off to the country, and I was asked to attend. By the time I saw her she had rubbed the hair off the top of her neck, shoulders, withers, and quarters, and apparently a good deal of the skin as well, This turned out to be an exceedingly obstinate case, and was not thoroughly cured until the end of the following October. To make certain that it was not mange, I on more than one occasion, assisted by a medical friend, examined portions of the skin microscopically, with negative result. I then put an old pony of little value in the same box with her and she used him as a rubbing post, but did not hurt him.

The treatmeut of this troublesome disease as given in text-books, combined with other remedies that occurred, or were suggested to me, was in this case thoroughly carried out. I will therefore detail it to you, at the same time emphasising those remedies which appeared to me to have the most effect. Feeling quite sure at first that this was a case of acute eczema, I administered a dose of physic, and gave orders that as soon as it had ceased to act the diet should be changed in every possible way, preference to be given to green food. The physic was followed by powder containing—

Potas bicarb.	2 drs.
Pot. nit.	2 drs.
Nux. vomica.	½ dr.

Ordered the skin to be gently but thoroughly washed with soda and warm soft water, and sent a supply of the following lotion: liquor picis alcoholicus one part, soft water eight parts, to be applied twice daily. This is an excellent remedy in acute eczema, At the end of a week a note came stating that the mare was certainly better, but still rubbed. I may here incidentally mention that every possible means was employed to prevent her from damaging her skin, for if left to her own sweet will she would have eaten herself.

On my next visit found her generally improved ; the skin looked better, there was less moisture, but the tendency to rub was still evident. Medicine and lotion to be continued for a week.

The next report was that she seemed much better, but to my intense disgust on calling again found evidence of another crop of vesicles on the neck and withers. The itching as bad as ever. Medicine changed to acid nitro-hydrochlor dil., two drs. twice daily in the drinking water. The skin is to be carefully washed with mercurial soap, and a lotion afterwards daily applied, liq. plumbi, glycerine, and soft water. To cut the matter short, it was a game of battledore and shuttlecock week after week. Gave small doses of aloes with sodii. bicarb. and gentian, followed by liq. arsenicalis. Dressed the skin according to its condition with everything that occurred to me, and at last was taken ill myself. Sir Henry Simpson saw her at this time, and very kindly wrote to me with reference to the case. He strongly recommended the application of the old-fashioned remedy oil of tar, sulphur, and train oil. As soon as possible sent a supply with full instructions, and on my next visit must candidly admit that her condition generally had much improved ; whether it was the liniment or the fact that she had gone short of medicine, etc., in consequence of my absence I don't know, but think the liniment did much good.

Three weeks passed away and considerable improvement was noticed, but she still rubbed at times. Seeing that everyone was sick of the case, not forgetting myself, I asked that she might be sent to my place for a month, and, as her fore legs showed signs of wear, proposed to blister them. This was

agreed to. The mare arrived, and on the following morning I thoroughly washed her myself from head to foot with mercurial soap and warm soft water. Blistered her fore legs the following day, with excellent effect; and from that day to the present she has never rubbed. About 5 ounces of unguentum cantharides 1 to 6 was used; this produced some amount of diuresis, and I firmly believe that whatever poison was left in the mare's system was eliminated by the action of that blister.

Case No. 1 was practically cured by hard work, change of diet, suitable medicine, and frequently washing the skin with mercurial soap, an excellent remedy in most cases of chronic eczema, and strongly recommended to me by that sterling old practitioner, the late Mr. Stanley, of Leamington.

Internal treatment may be summed up by saying that the object of medicinal interference should be to correct any abnormal conditions present in the organs or secretions. In acute eczema entire change of diet and water, physic followed by alkalies and vegetable tonics. Wash the skin with an alkaline solution, and apply remedies already mentioned. If there is much weeping, a powder consisting of starch, acid boric, and zinc oxide may be dusted on with benefit. In the chronic stage liq. arsenicalis, or liquor arsenici bromidi, and acid nit. hydro-chlor. dil., are useful, and may be alternated; and as external applications I should pin my faith to mercurial soap and a liniment or ointment containing sulphur and oil of tar; the bases being fish or animal oil, or lanoline. Should the case remain obstinate, I should certainly try, instead of blistering, small doses of cantharides internally, say 5 to 10 grains daily, with vegetable tonics. The medicine to be promptly stopped should kidney irritation be noticed. Sulphite of calcium was strongly recommended to me by an eminent Midland practitioner, but I cannot say that any marked benefit followed its use. Professor Williams read an interesting paper before the Lancs. V.M.A. on urinous eczema. Unfortunately I have not noticed this condition. The symptoms were constant discharge of ammonical smelling fluid through the skin, swelling of the limbs, with excoriations at their flexures.

These symptoms were relieved, and in one case cured, by the frequent administration of purgatives. The local treatment was palliative, such as emulsion of oil and potash followed by dry dressing of carbolized chalk or other absorbents. I should think when an animal starts urinating through the skin his chance of cure is extremely remote.

Urticaria.

Urticaria, commonly known as nettlerash or surfeit.

Professor Simmonds when lecturing on skin diseases used to tell a little tale. He and Professor Morton were rambling in the Isle of Wight when they discovered some tempting mushrooms some of which they gathered and ate. Shortly after Professor Morton developed symptoms of nettlerash, they made at once for a farm-house and procured some milk of which they both drank freely. This acted as an antidote, quickly stopping the rash in the one, and preventing it in the other. The Professor used to say that where milk could not be had, a good dose of whisky would have the desired effect. Shortly after I visited some friends in the South of London and there had a great treat—mussels for supper. Soon after the repast I retired, but awoke somewhere towards morning with the idea that I had either contracted scabies or was the victim of an attack from the little insect know as Pulex Irritans. I struck a light and found that from head to foot I was covered with a rash, at once diagnosed as urticaria. No one was stirring, so had to pass the next two hours as best I could. About 7 a.m. went down and procured some whisky, and thinking that two antidotes were better than none, diluted it with milk; soon afterwards walked to College, a distance of four miles, and on my arrival the rash had disappeared. Fortunately it was Saturday, so to com-

plete the cure, took at night two pills. As mussels had caused the disturbance, I, on the *similia similibus curantur* principle, selected "Cockles."

Our patients do not, as a rule, eat shell fish, neither do they show any particular liking for mushrooms. We must, therefore, look elsewhere for the cause. I think it may be generally traced to a deranged condition of the digestive system, with probably some ferment or poison circulating in the blood.

A most interesting case of urticaria occurred in my practice some two years ago. Subject—a five year-old hunter, recently imported from Ireland. Had received a bran mash over night preparatory to a dose of physic next morning, was found, to use the groom's expression, "smothered from head to tail with lumps." As soon as possible they sent for me. The symptoms noticed by me were those of urticaria generally, but in a marked degree. Not only was the horse covered with circumscribed swellings, but the lips, eyes, and nostrils participated; so much were the latter swollen that in breathing he made a pronounced purring noise. The pulse was about 50, temperature 102. My first care was to administer a strong diffusible stimulant:

Spts. æth. nit.	oz. ij.
Æther meth.	oz. ij.
Liq. ammon. acet. dil.	oz. iv. in water.

And 5 drms. in ball.

Advised that a linen or calico sheet be placed next the skin and the ordinary rugs over all. Left a supply of the above medicine, minus the ether, to be given at intervals, and paid another visit the following morning. The physic was acting freely, the face had resumed its normal appearance, the greater part of the swelling had disappeared, but there remained one on each side of the shoulder—just where those troublesome tumours come in cart-horses from the pressure of the collar—about the size of an ordinary saucer, hot, and extremely painful to the touch. A lotion containing liq. plumbi, tinct. opii. and water was ordered, and the medicine continued until the following day, when the swelling on the near shoulder had almost disappeared, but the one on the off side had doubled in size, was hard, but less painful. This puzzled me. As something had to be done, I ordered frequent warm fomentations; the lotion to be continued, and sent powders containing

Potas. bicarb.	2 drs.
Potas. nit. and gentian..	2 drs.

The tumour remained *in statu quo* for several days. At last determined to blister it; in three weeks it was reduced one half; a second application, assisted by the internal administration of potas. iodide, completed the cure, and the horse was soon after sold. I hope some of you may be able to enlighten me as to the nature of this enlargement, for up to now I remain in ignorance.

The treatment in this case is in the main applicable to all. Strong diffusible stimulants, a moderate cathartic, followed by salines and vegetable tonics. In an urgent case should bleed. If there is much itching a lotion containing—

Hydrarg. perchlor.	10 grs.
Acid hydrocyanic dil.	4 drs.
Aqua	1 pint.

May be applied with advantage. One or two cases that I have attended have been ushered in by a well marked rigor and diarrhœa. That would not determine me from giving an aloetic purge. I say aloetic, because some might advocate linseed oil, a drug that, in my opinion, so far as the treatment of the horse is concerned, might well be eliminated from the pharmacopœia.

Erythemá.

We shall now pass on and briefly consider the disease known as erythema, which really means redness of the skin, or a blush. It may be termed a true dermatitis, characterised by heat, pain, redness, and more or less swelling. Two or three varieties are spoken of, as traumatic, exudative, and erythema intertrigo. the latter usually seen in fat animals that sweat freely and are not properly groomed, in mares in and occasionally out of œstrum, through the urine trickling down the tender skin of the thighs. I take it that all these varieties may be classed as traumatic.

The causes are extrinsic, although we know that some animals are more susceptible to skin irritation than others. Our attention is principally directed to the condition known as cracked heels. Mud fever. sore backs and shoulders, and other parts that come in contact with the harness or saddle.

Unfortunately for us the marvellous winter through which we are now passing has not been provocative of mud fever or cracked heels. Zinc ointment and similar remedies have been at a discount. Back lotion has, however, gone up to a premium. During the decade terminating with the year 1889, and which, with one exception, was noted for wet winters, the treatment of mud fever materially added to our annual returns, and it was during that period that I saw many cases of exudative erythema, accompanied by a considerable degree of fever and constitutional disturbance, and followed by general desquamation and most troublesome fissures, not only in the heels, but up the back of the limbs, notably the hind. It was soon evident that horses whose limbs were clipped and frequently washed suffered by far the most. It therefore became fashionable, and rightly so, to leave the hair on the limbs and do without washing. The latter cannot always apply, for I know districts where the mud is so tenacious that it is absolutely impossible to remove it without soaking and well soaking too. Clipping and washing are undoubted provocatives, but in a well regulated stable should still hold with washing a horse that is plastered with mud, and, of course, thoroughly drying after. In treating erythema local applications are of the first importance, together with the instant removal of the cause. In mild cases, whether it be mud fever, chafed backs, or what not, the parts should first be thoroughly cleansed with warm water, and afterwards carefully dried with a sponge, followed by a soft cloth. A lotion containing liq. plumbi, glycerine, and soft water, or a saturated solution of acid boric, should be applied and the limbs tightly bandaged. In inflamed backs the boric acid lotion is especially useful; the part should either be covered with a soft rubber, or a calico or linen sheet take the place of one rug. A dose of laxative medicine may be given with advantage, and this should be followed by salines with vegetable tonics. This treatment applies also to sore shoulders and necks. The latter condition may invariably be prevented by fixing in the top of the collar a zinc pad. In badly cracked heels one or two poultices of bran and linseed meal or boiled carrots may be necessary; after removal the parts should be thoroughly cleansed, and then smothered with benzoated oxide of zinc ointment, into which has been rubbed or stirred a small quantity of camphor. Where the cracks or fissures are extensive, a weak solution of argent nitras. may be applied, or a lotion containing zinc sulphate, glycerine, and acid carbolic.

In exudative erythema distributed over a large surface, we may, after a thorough cleansing, freely dust the parts with finely powdered zinc carbonate. The common lapis calaminaris is the best. When desquamation commences, I usually apply a liniment containing lig. plumbi 1 part, olive oil 4 parts, or a lotion containing a considerable proportion of glycerine. Should there be much œdema, or the animal be in a weak condition, tonics combined with a mild diuretic should be given. Ferri sulph, resin and gentian given in ball is an excellent remedy, as also is the acid nitro-hydrochlor in the drinking water.

The diet should be fairly liberal, and where green meat is not obtainable, carrots are an excellent substitute.

Such, gentlemen, is my paper. Crude and unpolished it is, but I sincerely trust that you may find in it food for discussion. We are all of us workers, or, at all events, think we are, but few of us care after a hard day's work to study bovine medicine or equine surgery, or treatises on diseases of the skin. Interchange of ideas at such meetings as those do a busy practitioner far more good than groping his way through some ponderous volume. Pull the paper to pieces all you can; tell us all you know, so that when we leave this room to join again at the festive board, we may one and all feel that we have added something more to our store of knowledge.

Discussion.

Captain RUSSELL said he was sorry he did not feel in the position to raise a discussion on the paper which had just been read to them. They had no time or opportunity to do themselves justice in a discussion on such a paper that day. He must say that he never heard a more lucid description of the various diseases than that Mr. Freer had just given. He should like to congratulate Mr. Freer personally on the treatment he had described. He failed to find a single fault with the paper. As to the disease eczema, he approved generally of the train oil and oil of tar treatment, but he was sure they would agree with him that it was seldom two cases required the same treatment. They would find that apparently desperate cases readily improved under treatment, whereas others of a simple character would require particularly drastic measures before a radical cure could be effected. He thought it would be an experiment worth trying, to blister another horse under the conditions mentioned in the paper, and see if that would effect a cure. As to nettle-rash, they, in his part of the country, were not called upon to attend many of those cases. He did not think he had had over six or eight cases in the whole year. They had had an interesting case in a cow. The owner thought the cow was suffering from anthrax, because she was swollen to twice her natural size. They gave a simple purgative, and left a lotion of liq. plumbi, but he thought the purgative was the thing that was actually necessary, and the next day the animal was well. In India they used to have many cases of nettle-rash, as the horses were kept out of doors tied up. As to mud-fever, he had used the sub-acetate of potash with glycerine and oil, and the internal remedies. Cracked heels were almost things of the past. He had not seen a cracked heel for three or four years, except as the result of an injury. He never allowed one of his horses to be washed now, because his horses once had mud fever badly from this cause. They were now just rubbed with a wisp, and put in the stable until the legs were perfectly dry, and then brushed down.

Mr. HARTLEY wished to add his thanks to those of Captain Russell and Mr. Freer for his very practical paper, and for his correct and telling description of the various phases of these troublesome diseases. He himself had used mercurial soap, which he considered very effectual. His soap contained biniodide of mercury, with an excess of the iodine. He also did not believe in hunter's legs being washed. First rub off with a straw wisp and bandage on the top of the dirt, but if they could always ensure proper treatment in drying, and have the water at the right temperature, washing would not have a bad effect. Captain Russell referred to the fact that from limestone roads horses often contracted mud fever, and he knew three separate farms, each having horses with mud fever caused in that way. Mr. Hartley briefly described his treatment of sore backs.

Captain RUSSELL asked if paraffin was used pure or mixed with anything. Had Mr. Freer ever experienced that paraffin rubbed over a horse took all the hair off its body and left it completely bald?

Mr. HARTLEY said he used paraffin and castor oil, one to four.

Mr. GOOCH said on almost every point he agreed with the essayist as regarded the treatment and the length of time. He had used an alcoholic solution of coal tar with excellent effects—oil of tar with a little white hellebore.

Mr. KIDD thanked the essayist for his paper, and said that eczema showed like ringworm, but without the roughened surface, and much larger. In one case he cited, the spots extended over the shoulder and neck, and the surface of the spots was in one case of the size of a crown piece and in the others of half-a-crown. They came up in vesicles, and the epidermis came off and left a bare patch. Erythema looked like mud fever and cracked heels combined. In each of the cases there was an exceedingly foul-smelling discharge. This he attributed to the unhealthy condition of the digestive apparatus and the sluggish condition of the urinary organs.

Mr. CLARKSON said he could thank Mr. Freer for his interesting paper, as it was one to which he had listened with great pleasure. He had a quantity of mud-fever cases, which he first treated with lard and olive oil. He advocated the use of prussic acid with an alkali, and afterwards a corrosive sublimate lotion. Captain Russell had mentioned paraffin. He could only say that a manager of one of the collieries he attended had used paraffin with wonderful effect, especially in the treatment of laminitis. Mr. Hartley asked Mr. Freer if he could tell them anything that would colour tar emulsions and destroy the peculiar smell, as they were apt to be mistaken for the well-known remedies. He had used aniline as a dye and oil of cloves to scent them.

Mr. GRESSWELL thanked the essayist for his paper, and said they had often cases of nettle rash in his district through horses eating a quantity of potatoes and bringing on indigestion.

The PRESIDENT also thanked Mr. Freer for his paper, and agreed that it was not advisable to wash hunters' legs. Cracked heels they were always liable to in horses out of condition, and sore backs they could not help sometimes, and perhaps the worst time was just now, when the hair had done growing.

Mr. FREER, in reply, said he was very much obliged to them for the way in which they had handled his paper. He had simply brought it forward to stimulate discussion, and this end had been attained. He agreed with Captain Russell that it was a very good plan in eczema to vary the treatment entirely. In the case in which he mentioned the use of paraffin, the owner had applied it, he had not, although he had seen some good effects from a weakened solution of paraffin, and he had also seen horses denuded of hair from the injudicious use of that remedy. He believed in leaving the mud on horses in badly-regulated stables until the next morning ; but where they had a stable where the horses were thoroughly groomed and dried afterwards, he should advocate washing. No doubt in districts where limestone prevailed it would act as a caustic. He was a great believer, too, in a saturated solution of boracic acid. The case which Mr. Kidd mentioned looked to him like a case of herpes, a non-contagious form of ringworm. He had used corrosive sublimate in eczema in the proportion of ten grains to the pint of water. He was very fond of leaving the hair on under the saddle where horses had a tendency to sore backs.

Mr. ROBINSON proposed a vote of thanks to Mr. Freer for his paper, from which they had all derived a great amount of pleasure and information. When he asked Mr. Freer to give them a paper he knew that from Mr Freer's practical knowledge and well known literary ability, they were sure to get something worth hearing, and they would all agree that he had not been mistaken.

Mr. GOOCH seconded the vote of thanks and it was adopted unanimously, and suitably acknowledged by the essayist.

Mr, MACKINDER proposed, and Capt. RUSSELL seconded a hearty vote of thanks to the retiring president.

Mr. RUDKIN, in reply, said it had been a very great pleasure to him to hold office and he should always be willing to do all he possibly could to further the interests of the Society.

After the meeting the members present dined together, and after the usual loyal and patriotic toasts had been duly honoured, the Council of the R.C.V.S. was proposed in eulogistic terms by Captain RUSSELL, coupled with the name of Mr. Kidd. Mr. KIDD in reply mentioned that he would be a candidate for re-election to the Council in May next, and it was unanimously resolved that the Lincolnshire Society use all its influence to secure the return of Mr. Kidd to the position which he had filled so ably since his first election to the Council.

J. A. ROBINSON, *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE 34th annual meeting and dinner of the above Society was held at the Grand Hotel, Manchester, on Friday, the 14th February, 1896. Meeting at 5 and dinner at 6 p.m. Present:—The President, Mr. J. H. Carter, in the chair. There were also about 40 members and guests, including Professor Williams, Drs. Hutton, Kelynack, and Delépine.

It was proposed by Mr. S. LOCKE, seconded by Mr. E. FAULKNER, and carried unanimously that the minutes of the last meeting be taken as read.

Nominations for Membership.

Professor WILLIAMS nominated Captain Hayes, Tarpoley, as a member of the Association.

Mr. W. A. TAYLOR nominated F. W. Hall, M.R.C.V.S., Manchester, as a member of the Association.

Mr. WOLSTENHOLME proposed, Mr. S. LOCKE seconded, and carried unanimously, that Messrs. Faulkner and Jones be appointed auditors for this year.

The PRESIDENT then delivered his inaugural address, published in last month's issue of the VETERINARY JOURNAL.

The members then partook of dinner.

The PRESIDENT proposed the toast of the Queen; Mr. William DACRE (Vice-President) proposed the toast of the Prince and Princess of Wales, and the rest of the Royal Family.

Mr. A. LAWSON, in proposing the toast of the Navy, Army, and Auxiliary Forces, said he thought the navy was still as great as ever; that the army, under General Wolseley, would be much improved; and that the volunteers would be the backbone of the nation.

Mr. MASON, who responded, said he endorsed Mr. Lawson's sentiments.

Mr. WOLSTENHOLME, in proposing the toast of the Medical Profession, said he took very great interest in the intercourse he had with that profession, for it always led to further improvement. He also thought that in Manchester veterinary surgeons were happily placed in having a medical profession with an *alma mater* that is particularly kind and generous. He asked the members to drink to the health of the medical profession, coupled with the names of Drs. Hutton and Kelynack.

Dr. HUTTON, in responding, said it was a great pleasure to Dr. Kelynack and himself to be present at the L. V. M. A.'s festive board. Of course they were there not as individual members of the profession, but as officers of the Pathological Society, which had the honour of numbering some of the L. V. M. A. as members. He was among, if not the first, to suggest how

much the Pathological Society would benefit by the admission of members of the veterinary profession at their meetings, and it was a pleasure to him to remember that the proposal met with approval. He would like a great many more veterinary surgeons to become members, because he found that those who attended their meetings were by no means idle spectators, but were material contributors to the success of the meetings and the advancement of the science which they all had at heart. Looking at the problems facing them now, they could receive much help from the veterinary profession. The most prominent matter which sooner or later would have to be dealt with, was the question of tuberculosis, as it occurs in human subjects, and its relation to tuberculosis in the lower animals. When such expressions of opinion as they heard from the various agricultural societies, that a proportion of cattle varying from 30 to 50 per cent.. according to the district, are the subject of tuberculosis ; when they saw in their midst the enormons mortality among infants, where there had been no history of tuberculosis previously, they could not but ask themselves whether it had come from taint from parents of a tubercular nature, or whether the real source must not be sought elsewhere ? The conclusion they had come to from the many cases at the Children's Hospital, was that special attention should be given to the meat supply, and very much more largely to the milk supply. In this the medical profession must shake hands with the veterinary, and so urge the public by educating them to adopt more stringent measures with regard to the meat and milk supplies. He thanked the members for the honour they had conferred upon them by asking them to the dinner.

Dr. KELYNACK said : Mr. President, Mr. Wolstenholme, and gentlemen, I remember reading some years ago in an old author that the points of a good horse were 15 in number. I presume that this number has been increased in recent years, but I have forgotten, I am sorry to say, what most of these 15 points were. Six, however, I remember, because in three it was stated that the perfect horse partook of certain properties of man, he was bold, he was proud, and also he was hardy ; and in three points he partook of a noble woman, fair-breasted, fair-haired, and easy to move. It seems to me that your Society in many respects complies with these points. Certainly it is a bold Society ; for I see that it takes the name of Medical, and that, in my mind, is one of the grandest names with which anyone may be connected. It has also every reason to be a proud Society, because it numbers among its members yourself, Sir, and ex-presidents and members from all parts of the country and from adjacent counties, who have formed the Society, and who have helped the profession not only in this city but in all parts of Yorkshire, Lancashire, and Cheshire. It also seems to me a very hardy Society, for it has I believe almost reached the years of maturity to which I myself have reached. It is unnecessary to attempt to point out the particular attractions of your Society, bnt certainly the members, so far as one can judge by external appearances, are only surpassed by the medical profession. It certainly is a fact that this Society is easy to move, for I believe during past years it has widely increased both in numbers and in influence, and I take it that this easy movement is due to the able hands that have from year to year held the reins of authority. You have associated my name in this toast with that of the medical profession and I feel it is a great privilege to reply to this toast. First as a personal member of this profesion I am proud to be here, secondly as being connected with the Pathological Society I am glad to second the remarks of our president. I am also pleased to sit with our esteemed chief, Dr. Delépine, at this table. I am also pleased to be present as a member of the Owens College staff, the doors of which College, as Mr. Wolstenholme has so well pointed out, are always open for investigators. I am also specially pleased to meet my old and energetic co-worker at this hospitable board. It

seems to me that it is specially through my connection with the Pathological Society that you have been good enough to invite me here; and although Dr. Hutton is always anxious to attract new members and I as treasurer to receive their subscriptions, yet I think I may truthfully say the main, if not sole, point of our Society is to give and get information. This we are willing and anxious to do from all sources. If I might venture upon an opinion as a young man it seems to me that the study of the relationships been man and animals have hitherto been too much in the hands of anatomists and physiologists, and I venture to think that the time has come when we, as pathologists, if we are to advance in a way which will be of mutual advantage, must study many of these processes together. Certainly as far as I can gather, co-operation is essential between the human and animal pathologist. It would be out of place for me to venture to point out, if it were even within the scope of my ability, the way in which veterinary medicine has benefited my medical practice and custom, but I would take this opportunity of gladly acknowledging the debt that we as human pathologists are under to the students of animal pathology, and it seems to me at this time when it is the fashion in certain circles to decry and minimise the influence which animal pathology has had on human pathology, only meet and right, and to avail oneself of the opportunity in expressing our indebtedness to the investigators both medical and veterinary who have by their researches on animal life thrown light on the human subject. If time would permit one might readily refer to the increase in our knowledge of the etiology and processes of such diseases as anthrax, tuberculosis, rabies, actinomycosis, septic diseases, and the like, in which our knowledge as regards man is in very great measures due to investigation on animals. As practical physicians we know the value of these investigations, for we are constantly using measures for the alleviation of suffering, which are the direct outcome of these researches. As striking examples, I have only to refer to the Pasteur treatment for rabies to the use of such agents as immunised serum in diphtheria and for the wonderful results that during the last few years we have reaped from the use of the animal extracts in such diseases, for example, as myxœdema. If I remember rightly it was Oliver Wendell Holmes, a true lover of men and animals, who pointed out that the "best part of knowledge is that which teaches us where knowledge leaves off and ignorance begins," and if we have reached that stage, and I think many, if not all in this room, will have reached such a stage, we can but help seeing before us an immense field needing earnest investigators. I believe the efforts in Manchester and Salford of such gentlemen as our officers of health, Dr. Niven and Dr. Paget, are tending to stamp out many of our preventible diseases, and to limit the spread of these diseases which are our national disgrace, and no doubt the time will speedily come when many of our profession will have plenty of leisure. I also understand the use of the cycle, and according to to-day's paper the rapid introduction of motor carriages will soon give the veterinary profession more spare time. It seems to me, gentlemen, that in the near future this good time is coming for both professions, that we may turn our thoughts to careful investigation, and perhaps co-operate together to clear up some of the dark problems which still await solution. I thank you most heartily for this opportunity of associating my name with such a profession as the medical profession, and in return wish your Society the warmest success, and trust that the two professions in Manchester, and especially in connection with the Pathological Society, with which you have coupled my name, may progress as favourably in the future as they have done in the past. I thank you, gentlemen, most heartily.

Dr. DELEPINE: Mr. President and gentlemen, you could not have done better than to ask a member of the medical profession to sound your praise.

Nobody could appreciate the work done by the veterinary profession better than medical men. The extremely modest view which my friend and colleague, Mr. Wolstenholme, has taken of the relation between the medical and the veterinary professions makes it easier for me, perhaps, to speak with admiration of the work done by you. I can give you as an example of the esteem which we have of your abilities a slight anecdote which concerns no less a man than Prince Bismarck. He had been for some years rather unwell. He lived well, perhaps too well—and had got many of the Court physicians, who, knowing that it does not do very well to impose very strict conditions upon a man of his position, did not care to say exactly what they thought. He called in a younger physician, who began by asking a few ordinary questions of him, and his illustrious. patient turned round and said, "I did not ask you to come here to ask me questions, I want you to treat me." He said, "Yes, I think if you were a horse I would not ask you questions, I would have to do without it, but you, being a man, I took advantage of the position, and I ask you a few questions." That shows at once the difference between the two professions. Perhaps you have the advantage of not having to deal with lies. For many years, for several years I think, I have expressed freely the view that the strength of the two professions was in their union. There are a great many problems which begin in the animal—in the lower animal kingdom—and culminate in the human. The spread of many diseases which have been mentioned, and I will not go again into technical difficulties which have been alluded to by Drs. Kelynack and Hutton. Many of the diseases which come to man and the lower animals are communicable not only from animal to animal but from animal to man, and the only way to deal with them is to stamp them out in those animals which are capable of communicating them to man, and the great thing in many instances is of course to recognise the presence of those diseases and their prevalence among the lower animals. For a long time the medical profession have been vain enough to say that they could organise diseases in the lower animals without the help of their colleagues, that is to say, they thought their knowledge of human pathology was enough to organise diseases in the lower animals. Lately, at a meeting of the British Medical Association in London, a medical man was venturesome enough to say that a short training would allow medical men to inspect carcases and to give reports quite as good, if not better, than veterinary surgeons. Now it was not necessary for any veterinary surgeon to go there and say that was a mistake. There is a certain amount of knowledge which is better attained by the studies which you have to prosecute than by the kind of studies which we have to undergo, and therefore we have here at once an acknowledgment both by the medical profession and the public at large of the necessity of our combination. The great work which has been done by a large number of veterinary surgeons especially in connection with diseases already mentioned, viz.:—Tuberculosis, anthrax, myxœdema, glanders, and certain septic diseases, show that we have derived a lot of our knowledge of infectious diseases from work which has been done at least in a great part by veterinary men. It is a thing which we acknowledge in all our medical text books, and which none of the higher scientists will deny, and therefore I think I may say I have power to propose the toast of your profession, and to associate with it the names of Messrs. Faulkner, Locke, and Lawson.

Mr. E. FAULKNER, in responding to the toast of "The Veterinary Profession," proposed by Dr. Delépine, said : Mr. President, Vice-presidents, Dr. Delépine, and gentlemen, I thank you very much indeed for having asked my colleagues and myself, as members of the Council of the Royal College of Veterinary Surgeons, to respond to this toast of "The Veterinary Profession," which has been submitted in such very generous and sympathetic terms and

manner by Dr. Delépine, and I think, gentlemen, we not only appreciate the manner in which the toast has been submitted, but we have every right to do so for the simple reason that there is no gentleman in the medical profession in this district who knows more of the veterinary profession than does Dr. Delépine. Not only is he acquainted with the veterinary profession in this country, but I believe I am justified in saying that he has an intimate knowledge of what the veterinary profession is on the Continent, and as the outcome of that knowledge has submitted for your acceptance the toast of "The Veterinary Profession" in a way that appeals, I am sure, to the feelings and heartfelt sympathy of every member of the veterinary profession gathered here this evening. Not only is Dr. Delépine acquainted, as I have already said, with our profession here and on the Continent, but he is one we look up to in this district because he is fully cognisant of the way in which the two professions overlap one another and dovetail into each other in certain directions, and he can readily notice from his experience the necessity for co-operation in the work that has to be done by the pathologist, be he human or veterinary, and, gentlemen, I think I am justified when responding to this toast in endeavouring to put our calling on high ground, somewhat on the lines taken by Mr. Wolstenholme. We do not look upon our profession as a trade. We do not look upon it in the light as to how much money we can amass in a given time. Rather would I be inclined to follow the lines taken by Dr. Kolynack, Mr. Wolstenholme, and also by Dr. Hutton, that we follow our profession, I think in a very great majority of instances, in consequence of our natural love of animals. I believe if our profession was polled we should find that the great majority of us who have undertaken to follow his particular calling have done so from our natural love of the lower animals, and following on from that it comes in the natural order of things that if we have a love for the lower animals we are also disposed to do our utmost to alleviate their sufferings, to make their conditions of life as comfortable as possible, and to do our utmost to prevent the diseases they are subject to. It may not be, perhaps, at this moment advisable from a pecuniary point of view, but I believe that we get the benefit in the knowledge that we have endeavoured to do our duty by those that are unable to help themselves, and following on still further, gentlemen, the love of animals—our endeavour to make their lives more comfortable—we come to that which is necessary to the end in view, viz., the progress of our profession. I take it we one and all of us, in pursuing our professional career, are ambitious for the progress of our profession. It is part and parcel of our everyday life. We may not make a lot of money, but we have the pleasure and satisfaction of knowing that we in our day and generation have done our best in that particular sphere in which we are placed, and in that particular sphere of professional progress we naturally look to the representative governing body of our profession, viz., to the Royal College of Veterinary Surgeons, its Council and its President, and I particularly regret that this evening we are not honoured by the presence of the President of the Royal College. I feel sure that you would all have been particularly pleased to meet him, because he is one (although we may say representative of the provincial general practitioner) who does his duty in the position in which he is placed at the present time. He spares no effort, and I think there never was a president of the Royal College within my own experience under whose guidance it was a greater pleasure to sit and to show you that his heart is with us in all that pertains to the welfare of the profession. Not only does he do his duty to the Council, but he endeavours to keep the societies in touch with what is going on. He intimated to-day by his letter to the President of this Association that he had had an interview with the President of the Board of Agriculture, and I feel quite sure that he has done the best he could under the circumstances, and made every effort to benefit

the profession as the result of that interview. With regard to the Council of the Royal College and its several committees, no doubt a good deal of interest is taken in their proceedings. This has become very evident of late, and is no doubt perfectly well known to all of you. We have seen various criticisms levelled at the different committees, and also at the Council. We have seen the veteran, Professor Williams, on the war path. The respected Editor of THE VETERINARY JOURNAL has undoubtedly gone over the work of a certain portion of the examination committee of the Royal College of Veterinary Surgeons, and I think it will not be denied that he has hit out straight from the shoulder and above the belt. There is nothing, I take it, in the manner in which he has criticised the action of that particular Committee, or that portion of the Committee, but what indicates an earnest desire on his part to put what he found to be wrong, right. We have had the Editor of the *Veterinarian*, Professor Dewar, dealing with the Registration Committee, and the Editor of the *Veterinary Record* attacking the Council as a whole, of which he himself forms no inconsiderable part. Well, gentlemen, I take no exception whatever to criticism so long as it is wholesome and of a healthy character. I think it tends to good, and shows the interest that is taken in our profession by the several gentlemen who take up the position of critics, and as long as criticism is healthy and wholesome, and makes for professional progress and advancement, we have no right to complain, although as members of Council, we always endeavour to do our duty so far as we are able to, and I think this Society may be congratulated upon the fact that its nominees, three somewhat young members of the profession, were placed on the Council of the Royal College at the first time of asking, and, further, that this Society is to be congratulated that they are pretty well in touch with all that goes on at the Council Board, for Mr. Alec Lawson is on the Finance Committee, Mr. S. Locke on the Examination Committee, and myself on the Registration Committee. Those are the three most important committees, and we are consequently well in touch with what is going on, and fully impressed with a conscientious desire to do our duty. Before I close my remarks I wish, with your permission, Mr. President, to refer to the National Benevolent and Mutual Defence Society. You are well aware, many of you, perhaps all of you, that the headquarters of this Society are located in Manchester. You also know that those who have recently been taken from us devoted the best part of their lives to the furtherance of its objects. Their positions were purely honorary. They had no self interest to serve. Their labour was one of love for the profession and gentlemen they have left behind them to succeed and follow in their footsteps. Some of us are as anxious to do our best by this Society as they were during their day, and, Mr. President, I say in order that it may be thoroughly well understood, this Society is a national one. It is not for the few but for the many. We wish to see not a minimum of our profession members, but the grand majority, if not all. I desire, in mentioning the subject, to say to those who are not already aware of it, it is most advisable for them to come in and join at once, not only to assist in endeavouring to carry on the good work, but by joining the Society they are doing that which is the very best possible thing for themselves. It has a twofold object, benevolence and defence; and particularly in connection with the young members of the profession, I may say as no one knows, no veterinary surgeon knows the day he may meet with a client who is of a litigious disposition, who may harass and worry him, and if he has such a Society as this to go to, where he can not only have sympathy but professional and pecuniary assistance, it is a very good help in such a time of trouble, and we who are officers, know that over and over again members have said, in times when they have been threatened with an action, "What a godsend the Defence Society has been." It lifted a load from their minds, and enabled them to meet trial with confidence and a bold front.

With regard to the Benevolent Society, well, perhaps those who do not belong to this Society may say, "Well, we are not fit subjects for benevolence, we do not require it"; but if they do not require it themselves, they may be the means of affording it to others, and I am very pleased to announce that in connection with this department of the Society, there is a possibility of enlarging its sphere of action. We propose to meet and endeavour to put the Society on such lines that it may assist deserving cases amongst those who are not members, in the time of their trouble and distress, and we thus can do some good, gentlemen, in our day and generation, by furthering the well-being of such a Society as this. I conceive it is our duty to urge all those who are not already members, to come in and assist in carrying on the good work, to protect themselves and endeavour to do some good to others. Gentlemen, I thank you for the kind reception you gave to this toast and the patient hearing afforded me.

Mr. LOCKE said he was exceedingly pleased to respond to the toast of the veterinary profession, and to hear from Dr. Delépine that the medical profession offers the right-hand of fellowship to the veterinary profession. He was sure they appreciated to the full their kindly feeling, and had no doubt that the union of the professions would be advantageous to both. As a member of council, R. C. V. S., he endeavoured to do his duty, and he hoped the members would be thoroughly satisfied with the services rendered. As to the National Benevolent and Mutual Defence Society alluded to by Mr. E. Faulkner, he thought all the members should be members of that Association.

Mr. ALEC. LAWSON also responded to the toast of the veterinary profession.

Professor WILLIAMS, in responding, said it was a great pleasure to him to be present once more amongst them and to see so many of his old students at the entertainment. He was particularly pleased to see one in the chair of their Society, and after a quarter of a century he was proud to think that he still possessed the friendship of the President and his revered father. He felt extremely flattered the members had in Manchester gentlemen with large minds and liberal and enlightened ideas such as Drs. Hutton, Kalynack, and Delépine, who had extended the hand of friendship to the veterinary profession, and called upon them to co-operate with them in order to throw light not only upon the diseases of the lower animals, but of man. Did the medical societies in small towns possess such friendliness, the veterinary profession would stand in a better position. He confessed, and he did so from a question which had been put to him, that in many parts of the country the veterinary surgeon was looked down upon, and often objected to, by the medical man as occupying an inferior station. If they had more gentlemen like Dr. Delepine and others, such a thing would not be, therefore he thanked them on behalf of himself and his professional brethren throughout the country for their kindly sympathy. He thanked them very much for the kind manner in which they had coupled his name with the toast.

Professor WILLIAMS, in proposing the toast of the President, said Mr. Carter was a gentleman well worthy of the position as President, and of his respect and esteem as an old student. He was sure he had made his mark in Burnley, and he was respected and honoured by all his clients. He had very great pleasure in calling upon the members to drink to the long life and prosperity of their President.

The PRESIDENT acknowledged, in grateful terms, his indebtedness to Professor Williams for his very kind remarks.

Mr. W. A. TAYLOR, in proposing the toast of the visitors, said: Mr. President and Gentlemen, it is with unfeigned pleasure that I rise to propose the toast of the visitors and it is a subject of self-congratulation that that toast is entirely free and separate from subjects of a controversial nature. Selfish, indeed, should we be if we assembled at the festive board without tendering

our hospitality to those friends who have deigned to honour us by their presence this evening. Lancashire, it is said, is the pioneer of politics in our land—next to that I would claim for it its sense of hospitality and as a very humble portion of the Lancashire community (the veterinary profession), will not in its feelings of hospitality come second to that if any other communion which gathers at the festive board and has the pleasure and honour of welcoming guests. It is, as I said before, with great pleasure the Lancashire Society of Veterinary Surgeons which, I believe, is the oldest provincial Association of its kind in our land, gathers together once more to celebrate another turn in the wheel of time. There are some that have been alluded to to-night who are absent. Though we regret their absence let the lives they lived shine before us as examples for us in our future lives. Let us be stimulated by the work that they did for the benefit and the progress of a profession which ranks second only to that of the relief of the diseases and the sufferings of mankind. Gentlemen, I feel proud to have my name mentioned by Professor Williams as being, perhaps, if not one of the oldest members of this Association, one who even in his boyhood took a pride in being at the side of his father in the advancement of a noble calling and gladly do I extend the right hand of fellowship to Drs. Delépine, Hutton, and Kelynack. In the good words and the good feeling they have expressed towards a struggling and a poor profession, they may rely upon it that when our studies permit of it we shall be at their side in the advancement of science and the progress of knowledge in alleviating the sufferings of humanity and of the lower animals .I rejoice to see the names of Dr. Fairclough and Mr. Fred Gibson associated with this toast. I am glad Dr. Fairclough is here to-night to do duty to the toast I have proposed ; I feel certain he will do justice to the work placed upon his shoulders. I am only sorry that in addition to him we have not some member of the City Council of Manchester, but I ask you that by all the honours that this Society is capable of, to drink to the health of the visitors, and long may the Lancashire Veterinary Medical Association be in a position to receive visitors and accord them a truly Lancashire welcome.

Dr. Fairclough and Mr. Fred Gibson responded.

Mr. E. H. Stent proposed the toast of the ladies, which was responded to by Mr. Wolstenholme.

CONTAGIOUS DISEASES ANIMALS ACT, 1894.

Summary of Returns of Outbreaks, for the four weeks ending March 14th, 1896.

England and Wales.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders including Farcy.	Rabies.	Foot-and-Mouth Disease.
None	Outbreaks confirmed 465 *Slaughtered.* As diseased, or having been exposed to infection 5095	Outbreaks reported 56 Animals attacked 54	Outbreaks reported 56 Animals attacked 82	Cases in dogs reported 74 Other animals ... 4 Dogs, etc., destroyed, as having been exposed to infection 40	None

SCOTLAND.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders, including Farcy.	Rabies.	Foot and-Mouth Disease.
None	Outbreaks confirmed 17 *Slaughtered.* As diseased, or exposed to infection 524	Outbreaks reported 15 Animals attacked 30	Outbreaks reported 6 Animals attacked 9	No rabies reported	None.

IRELAND.

None	Outbreaks confirmed 111 *Slaughtered.* As diseased, or exposed to infection 710	No anthrax reported	Outbreaks reported 2 Animals attacked 4	Cases in dogs reported 40 Other animals ... 9 Dogs, etc., destroyed as having been exposed to infection 144	None

THE BODYKE OUTRAGE.

Details of a Daring Crime.

Mr. Ernest Brown, who resides at Ballinacurra House, Limerick, has made the following statement regarding the daring outrage committed near Bodyke on Monday afternoon, which has already been briefly reported :—

"I am Colonel O'Callaghan's agent, and had to drive out to Bodyke yesterday and take with me Mr. Winter, V.S., of Limerick, to see seven bullocks that were poisoned with arsenic on the evicted farms at Clonmoher, and which I am farming for Colonel O'Collaghan. We left Bodyke for home (Limerick) at two o'clock without police protection. The police had to go to Scariff to protect the emergency man whom I sent to Scariff to swear information. Just as we came to Ballymacdonnell Wood, about half-way between Broadford and Bodyke, four shots were fired from four separate guns at us from behind a bank, covered with furze. The shots went about a foot over our heads. The driver (Coll), who always drove the late agent, Mr. M'Adam, pulled up the horse at once, and immediately three more shots were fired. One struck the car, just under where I sat, another passed between Mr. Winter and I, and another in front of the driver. The fence the men were firing from behind was thirty yards from the road. I got down, and took my magazine rifle from the seat, with seven cartridges in it, and pointed it at the place they were firing from. Just as I did so a single shot was fired point blank at me, and struck the fence in front of me, sending the earth over me. I immediately fired at the place, and giving my revolver to the driver, ran to the place they were firing from. When I got there two men were just getting into a large thick furze cover, about 60 yards away, and I fired a snap-shot after them. I heard running in the wood at my right-hand side and fired in the direction. I then went back to the road, and the driver and I (Mr. Winter had no arms and stayed with the horse) ran to the end of the wood and went through part of it, but could hear or see nothing. We then went into Broadford, and reported the affair to the police."

THE FAUNA OF CADAVERS.

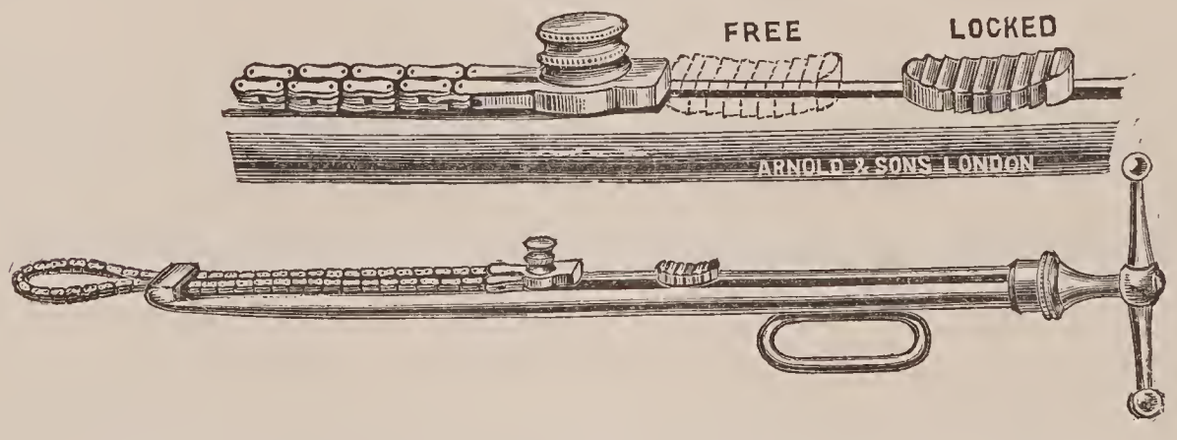
BY MR. P. MEGNIN.

It is a well known fact that myriads of insects take possession of cadavers whose spontaneous generation was accepted long ago. The author has observed that these insects (the *workers of death*) appear successively, and in the same regular order. He has counted eight different *corps d'armee* from the moment of death to the entire destruction of the cadavers.

The recent studies upon putrefaction show that microbes of different species follow each other regularly in the many complex phenomena of putrefaction, and that their action is every time marked by the formation of gases with various odours; these gases, detected by the insects even at long distances by their powerful and delicate olfaction, tell them of the degree to which the putrefaction has arrived, and thus allow them to select the one most convenient for the deposit of their eggs. Thus is explained the regular succession of the insects that Messrs. Megnin and Brouardel have called the workers of death, which are, consequently, the true reactives of the various degrees of putrefaction. These insects, in fact, continue their work even after the work of the microbes is ended; if there remain some small organic fragments, tendon, ligament or skin, which, hard and dry, have resisted putrefaction, they are destroyed by these gnawing insects, which thus come to complete the work of their predecessors.—*Comp. Rend. Soc. Biol.*

NEW ECRASEUR (Patented).

BY PROFESSOR J. R. W. DEWAR.



I have just had made for me by the Messrs. Arnold, an Ecraseur, which I am confident will supply a want long felt by the veterinary profession. They have managed to retain the slow steady principle of the screw, while by simply pushing forward the thumb plate, the slack of the chain can be pulled in as easily as in the old Chassaignac's, and by pulling it back again, the screw movement is at once thrown into gear.

The retention of the screw movement does away with the jerky action of the ratchet, so liable to snap the chain, and so undesirable where the arrest of hæmorrhage is essential.

The mechanism by which this is accomplished is inside the shaft, and, therefore, not liable to be disarranged in the course of an operation. The shaft is sufficiently long to make the instrument available for the castration of mares and cows, per vaginum, and is more convenient than a short one for castrating horses in the standing position. The chain is bevelled on one edge, so that it will crush and not cut, a great advantage in castration, while it can be reversed, and the angular edge used when more fibrous tissues require to be divided.

The slot through which the chain passes is also slightly blunted on the edges for the same reason, to prevent the sharp cutting action, which is such a fruitful source of hæmorrhage after the Ecraseur.—J. R. W. Dewar.

Parliamentary Intelligence.

A DEBATE of considerabie importance to agriculturists, and especially to Scottish agriculturists, took place in the House of Commons, on the evening of the 23rd March, on the second reading of what is known as the Diseases of Animals Bill. This is a Bill which proposes to prohibit absolutely the importation into this country of live cattle for feeding purposes. The second reading was carried by a sweeping majority, 244 members voting for and only 95 against it. Mr. Long is therefore to be congratulated on having presented a convincing case to the House. As the law at present stands, it is in the discretion of the Board of Agriculture to order the slaughter at the port of debarkation of all cattle arriving from a country where infectious disease is believed to exist in the herds. In point of fact, this discretion has been exercised with courage by the Board of Agriculture since 1892, and all store importations have been prohibited. The disease which is specially aimed at is the dread scourge of pleuro, which has in the past proved so destructive to the interests of British stock-breeders. The country specially affected is Canada, which, for ten years or so prior to 1892, had succeeded in building up a profitable trade with this country. Scotland has a considerable stake in the business. The Scottish farmers have found that even upon poor pastures in this country the lean kine brought oversea from Canada fatten rapidly, and command a good price in the meat market. With a view to encouraging the trade, special wharves were erected at Glasgow at a cost of £20,000, at Dundee at a cost of £20,000, and at Aberdeen at a cost of £5,000. In 1892 the trade was stopped owing to the complaints of the importation of pleuro. Acting on the advice of experts, the Minister of Agriculture ordered the slaughter of all animals at the port of landing. Of course, this involved loss upon the Canadian exporters, for the animals are necessarily in poor condition after a sea voyage. There have been protests from Canada and from those interested in the trade in this country. The Dominion Government has called expert witnesses to disprove the existence now or at any time of contagious pleuro among the Canadian herds. Those carrying on the trade on this side have declared that the stringency of the Board's action was unjustified, and was really dictated by a desire to help the breeders at the expense of the feeders. But the stock-breeding interests of this country, with the support of agriculturists in general, have maintained that the health of the native herds was endangered, and accordingly the embargo has been consistently maintained. The Bill which passed the second reading in the House of Commons on the 23rd inst., proposes to make the embargo absolute. It is no longer to be left to the discretion of the Board of Agriculture.

It was inevitable that so drastic a measure should arouse strong opposition, for it touches many interests. A large deputation from Dundee, Aberdeen, and the West of Scotland was present at Westminster on March 23rd to influence the votes of their representatives, and no fewer than six members, three from Scotland and three from England, had given notice to move the rejection of the Bill. Mr. Martin White, the member for Forfarshire, to whom fell the task of leading off for the opponents of the measure, recapitulated the stock arguments against it. He scented Protection in the Bill, urged that the price of meat would through it be raised, and that the refrigerated meat trade would reap the benefit. A strong appeal was made on behalf of the Norfolk farmers by Mr. Price, who claimed that this Bill would complete the ruin of these already oppressed agriculturists. Sir George Trevelyan also raised his voice against the Bill. Mr. Long, in a short and business-like speech, stated the case for the Government. While admitting

that the graziers of this country had suffered by the embargo upon store cattle, he pointed out that the Bill would not alter the existing situation. The stock-breeders of this country maintained that they had no security in their business so long as infected animals were being imported, and they were entitled to protection against disease. The Board are satisfied not only that pleuro existed in the Canadian flocks, but also that no amount of inspection at the port of landing could detect all cases of disease. As for the price of meat, it had actually fallen since the embargo was put upon the store cattle trade by the discretion of the Minister of Agriculture; and statistics showed that the trade in foreign dead meat and in live cattle for immediate slaughter was prospering and growing rapidly. He maintained that the only sort of protection involved in the Bill was protection against disease. These arguments did not commend themselves, however, to the opponents of the measure, and a protracted and desultory debate ensued, which occupied the whole sitting. The discussion did not follow strict party lines; but the case for the Government was too strong to be disposed of, and in the end Mr. Long had the satisfaction of carrying the second reading by a majority of 149 in a House of 339 members. The correspondence between the Board of Agriculture and the Colonial Office regarding the Canadian case, which was published on March 23rd, had no doubt its influence in determining the votes of many in favour of the Bill. The division may be taken as reflecting the general sense of the House on the subject. The Government has satisfied itself not only of the existence of pleuro in Canada, but of the impossibility of detecting infected beasts on their arrival, in this country. The talk about this being a measure of protection is plausible, but nothing more; for although it prohibits a trade which has been suspended for over three years, it in no way affects the importation of cheap frozen meat, or of cattle designed for slaughter at the port of debarkation, and everything goes to show that the trade is favouring these latter channels to the distinct advantage of the British consumer. Nor, if the store cattle business were as harmless as it is lucrative, would it be to the interest of this or of any Government to strangle it? To leave the matter at the discretion of the Board of Agriculture has the distinct advantage of allowing of the relaxation of the embargo when suspicion of disease is entirely removed. But, on the other hand, it exposes the Board to continuous pressure from the one side or the other, besides involving those engaged in feeding and breeding cattle in uncertainty and doubt as to the future of their businesses. It is probably these latter considerations that have weighed with the Government in proposing to make absolute and permanent an embargo which up till now has been temporary and discretionary.—*Scotsman.*

Army Veterinary Department.

Her Majesty the Queen has been pleased to bestow an extra pension of £50 per annum, from the Distinguished and Meritorious Service Fund, on Dr. Fleming, C.B., Principal Veterinary Surgeon of the Army, retired.

The following transfers have taken place:—Veterinary-Major G. Durrant, from Newcastle-on-Tyne to Woolwich. Veterinary-Major G. D. Whitfield, from Woolwich to Newcastle-on-Tyne.

The undermentioned Veterinary Officers have arrived at Aldershot for entry, on appointment:—Veterinary-Lieutenants J. T. Coley and W. M. Millar.

Dr. G. Fleming, C.B., retired pay, late Principal Veterinary Surgeon to the Forces, has been granted a "good service" pension of £50 per annum, which became vacant by the death of Staff Veterinary-Surgeon R. J. G. Hurford.

Extracts from Foreign Journals.

THE THERMOMETER IN TUBERCULIN INJECTIONS.

Monsieur R. Bissauge, of Orleans, writing in the *Recueil de Médecine Vétérinaire* on the best means of economising time and labour in testing cattle by tuberculin, says:—"The instructions for the use of diluted tuberculin, as issued by the Pasteur Institute, run to the effect that the temperature of the animals undergoing the test must be taken before the injection is made, and thereafter every two hours, beginning at the tenth hour after injection, and going on to the twentieth. In case of need the surgeon may content himself with three observations, namely, at the 12th, 15th, and 18th hour, but it is better to take the temperature every two hours. It happens very often in practice, however, that one has to operate on only two or three animals, and the farm is at a great distance, and so one has to choose between making several visits at short intervals, or spending a very long time at the farm for very little work—both plans involving great expense, and often entailing loss to the surgeon. The employment of the fixed thermometer proposed by Mr. A. Trevisan, of Venice, not having yet been adopted [see our next translation], there remains the plan of entrusting the taking of temperatures to the proprietor of the animals himself, but in the majority of cases this is impossible. I have tried it, and in a good many cases have received from small farmers the most absurd information as to figures, given, of course, in perfect good faith, and with the utmost gravity. The following is a plan I have adopted, with success in most cases, and which I recommend: On the morning of the operating day, or the evening before, I give the farmer as many maximum thermometers as there are cows to test, both thermometers and cows being numbered, to prevent mistakes, I take care to bring down the column of mercury myself, and I instruct the farmer to take carefully the morning temperature, or, to be more exact, to place the thermometer in the rectum of the cow bearing the same number, leave it there for a certain specified time, and then replace the instrument in its box. In the evening, just as I am going to inject, I note the morning temperature and take myself the evening temperature; these figures form my basis of computation. I bring down again the column of mercury. After the injection, which I make about five or six p.m., all that the man in charge has to do is to place the proper thermometer in each animal's rectum at the 12th, 15th, and 18th hour without bringing down the mercury; next day these instruments are brought to me and enable me to pronounce judgment, as I have before me in them the maximum temperature obtained. I do not need to trouble myself as to the precise moment when it was obtained." In a note appended to this communication Monsieur Ed. Nocard says:—"Reaction to tuberculin is measured simply by the difference which is found to exist between the temperature of the animal before injection and the highest temperature registered during the twenty-four hours which succeed it. One may therefore, in case of need, act in the manner indicated by M. Bissauge, but, of course, observations taken in this way are not so trustworthy as if taken by the surgeon himself and would have no weight in a court of law. It might be as well to make the farmer take the temperature four times instead of three, because sometimes the reaction is slow and only commences to show itself about the eighteenth hour, so that if no observation is taken after then the surgeon may not have a sure and trustworthy basis for his diagnosis; if the temperature be again taken, say at the twenty-first hour, there is no chance of such an error. The most important point in the whole case, however, is that this

mode of operation is available for *tuberculin test only*. It is *absolutely impossible* for the testing by *mallein*. In the mallein test we have to consider not merely the difference between the initial temperature and the highest temperature recorded after the injection: the *duration* of the high temperature has a real importance. For example a heat curve (*courbe thermique*) starting from 100·3° Fahr., and giving successively 101° at the 12th hour, 104° at the 15th hour, 101·3° at the 18th hour, and 101·2° at the 21st hour, showing a maximum rise of temperature of 3·7°, would have no significance. On the other hand a curve starting at 100·8° Fahr. and showing after injection 102·5°, 103·4°, 103·9°, 103·7°, would indicate a very suspicious case, although its maximum was lower than the other; the *form* of the curve is an element in the diagnosis which we must observe very carefully, and in order to get the proper curve we must register carefully all the temperatures taken after the injection. Besides all this, we must remember how important is the organic reaction, the general condition of the subject, the volume, the duration, and the sensibility of the œdema; how can a surgeon judge of these without having seen them? I repeat, to apply M. Bissauge's proceeding to the mallein-test operation would be to expose ourselves to the most painful mistakes."

A VETERINARY FIXED THERMOMETER.

One of the conditions which prevent the more general adoption of the methods of anticipatory diagnosis of virulent diseases by injections of detective substances is the necessity of taking, at frequent intervals and often for a long period, the temperature of the patient. Monsieur A. Trevisan, veterinary inspector of slaughter-houses at Venice, has constructed an apparatus for retaining the thermometer in its place in the rectum, without hindering defecation and without exposing the instrument to the risk of being broken. According to *Il Moderno Zooiatro* he has made a good number of experiments and has had satisfactory results. His apparatus consists of a sort of clasp (*pince*) which is fixed to the base of the tail and jointed to (*s'articule avec*) the thermometer-holder, which latter is easily brought to the level of the rectum. The apparatus has been tried both on horses and cattle, and has shown itself capable of fairly easy manipulation. The inventor proposes to adapt it for a maximum and minimum thermometer, so that it may be possible to leave the thermometer in its place in the rectum either before or after injection, and allow it, if necessary, to do the work of observation. The difference between the two points would mark the thermic reaction. M. Trevisan deserves the thanks of the profession for his ingenuity, but there are, of course, many serious objections to his plan. He has prepared two models of his apparatus, one for the larger and one for the smaller domestic animals.—A. Railliet in the *Recueil Vétérinaire*.

A CASE OF POISONING BY CHLOROFORM.

Dr. Fröhner, of the Berlin Veterinary College, states that in the surgical ward there, from 1st April to 1st October last, 195 serious operations were performed, 91 of which were performed under chloroform. In these a total quantity of 5,325 grammes (= 11·73 lbs. av.) of chloroform was consumed, or an average of 60 gr. (say 2 oz. av.) for each horse. For simple operations 30 to 40 gr. suffice, but for a fistula of the hoof-cartilage, for example, 70 to 80 gr. must be used (a gramme is about 15½ grains). In one case 225 grammes (8 oz. av.) had to be used; for inguinal ruptures 150 grammes (a little over 5 oz. av.), and so on. One case proved fatal. The horse, suffering from fistula of the hoof-cartilage, died after inhalation of 55 grammes (2 oz. av. or 1¾ oz. troy), that is, after a small dose. The narcotising was carried out in the proper way, and the material itself was perfect. The cause of death was

peculiar. The animal was twelve years old, fairly well fed, with weak but regular pulse; he became narcotised very rapidly; within ten minutes, and after 15 gr. had been used, they could begin the operation. At the end of other 30 minutes the breathing became suddenly very hurried, then after a minute stopped; the pulse became imperceptible, the veins swelled out immensely, and all the long-continued attempts to restore animation proved fruitless. On *post-mortem* examination nothing was found to be wrong beyond the congestion as above, except that there was a dilatation of the right heart, with systole of the left ventricle. It was afterwards discovered that the horse had suffered from heat-stroke on 8th July, and had been treated for such till the 20th, whereupon it showed the symptoms of severe brain-disease; from this the animal had recovered, but not sufficiently to allow it to perform any work up to the day when it was sent to the veterinary college. It was manifest that this illness had so weakened the nervous system that a dose of chloroform in itself harmless had produced a fatal result, without the complication of heart-disease or any other internal ailment.—*Berliner Thierärzt. Wochenschr.*

Influence of Abortion on Milk.—Messrs. Schäffer and Hess have proved in the course of their investigations that a previous abortion has as little influence as the retention of the after-birth on the composition of a cow's milk. The investigations were made for the purpose of examining the validity of objections which are often made at official inspections of milk when there is evidence of deterioration in the quality.—*Ibid.*

THE CHLORIDE OF BARIUM TREATMENT AND ITS CONCOMITANT EFFECTS.

Surgeon Thierfelder, writing to the *Berliner Thierärztliche Wochenschrift* reports as follows:—"A six-year old gelding was brought to me suffering from colic and stoppage of the bowels; showed severe intestinal pains; intestinal sounds were almost entirely absent. I gave him an intravenous injection of one gramme chloride of barium in ten of distilled water and he at once began to flap with his upper lip and to switch his tail, and then with much pressing and straining he voided some small hard balls of fæces. He was walked about the yard for a little, and kept on all the time ejecting dung and intestinal gases. After two hours of vigorous exercise he seemed extremely tired and sleepy and was therefore put into a stall. I now observed trembling of the muscles, which gradually extended all over the body and was specially perceptible in the muscles of the legs. The skin, the temperature of which was increased and also unequally distributed, began to show sweat on the flanks, pulse and breathing were markedly accelerated, the pulse throbbing greatly; temperature of rectum about one degree (Fahr.) higher. The lassitude of the patient increased from hour to hour, and at midnight was so serious that he could not be got, either by voice or whip, to stand up on his legs. At this time his whole body was covered with sweat, and from the anus there flowed an almost constant stream of thin, watery fæces. I noted pulse and breathing at frequent intervals, and observed that after midnight there was a gradual return to the normal condition, which was finally reached in the morning, only the temperature remained obstinate, as above; but the appetite returned, and the patient took the bran and hay which I offered him. When, however, my assistant tried to take him out to the yard we found him quite lame. This lameness, which had come on the patient overnight without being noticed, now showed itself as a pronounced case of lameness of the right fore-leg. From the way in which the animal tried to save his foot even when in a state of repose, it was evident that the lameness was accompanied by severe pain, and of this fact clear evidence was given by the look and behaviour of the

patient. On examining the hoof with my hand, I could detect increased heat; when I applied the sounding-hammer, ever so gently, the animal uttered cries indicating the severest pain, more especially when I tapped the sole and the digital part of the wall. I noticed also a stronger pulsation of the hoof artery. These symptoms justified a diagnosis of inflammation of the hoof (pododerm. superfic.). With this lameness there was associated, as a secondary and remarkable condition, a fairly well developed œdema extending from the hoof to the carpus of the fore-leg. The course of this lameness, which was so interesting from the etiological point of view, and which was destined to be affected by no therapeutic agent (such as ice, clay, vinegar) which we could apply, occupied three days, and led gradually, as the inflammatory symptoms disappeared, to a complete recovery. Even the appetite, which had become somewhat enfeebled, returned after the disappearance of the inflammation, and on the fourth day the animal was cured of his colic and his lameness, and was ready for at least a part of his work." Mr. Thierfelder gives a second case as follows :—"A six-year old gelding, suffering from colic and stoppage of the bowels, was treated by me with 10 grammes (6 dwt., 10 gr.), of chloride of barium by the mouth, and showed similar subordinate symptoms to the above; pulse and breathing were quickened, after 24 hours the legs swelled very considerably, and the patient gave one the impression of having stood a very long time in the stable; in his normal state he had never shown any œdematous tendency, so that on this occasion the œdema must be attributed to the effect of the barium. The œdematous swelling extended as far as the belly. Etiologically these two cases clearly support the assumption that inflammation and inflammatory œdema are the indirect result of the paralysing of sensory or motor nerves. This being so, the interference with the circulation, observed in both cases, must be regarded as a serious factor in bringing about the inflammatory processes. I should like, however, to point out that these subordinate effects are not to be regarded as in any way unfavourable, and that they in no way interfere with the value of chloride of barium in cases of colic. According to my experience this is a drug worthy of the highest consideration."

THE SPREAD OF TUBERCULOSIS THROUGH EXCRETA.

Professors Cadéac and Bournay administered to a young bull in the course of four days a tuberculous lung of a cow full of bacilli. During the five following days there was taken, morning and evening, a quantity of the bull's fæces (seven oz. av.) which was dissolved in water, filtered, and inoculated into rabbits. Of the sixteen rabbits used for the purpose two died of septicæmia and the remainder all died showing tuberculous lesions. Microscopic examination of the bull's fæces revealed the presence of the Koch bacillus.—*Journal de Lyon.*

THE TREATMENT OF RABIES.

The following letter, addressed to the editor of *La Presse Vétérinaire*, appears in the December number of that journal :—"In conformity with my promise, I send you an account of my mode of treating pronounced rabies. It consists, first, of the use of sulphate of soda, chloral hydrate, and a decoction of linseed, given as a drink, in the following dose to a dog of, say, 45lbs. (avoird.) :—

Sulphate of Soda	.. ..	100 grammes (3½ ozs. av.)
Chloral Hydrate	.. ..	5 ,,
Decoction of Linseed	.. ..	500 ,,

"This is given for the purpose of calming the attacks and producing at the same time a purgative and refreshing action. The linseed decoction is not only refreshing but also diuretic. The diuresis which it produces allays the

inflammation of the urino-genital apparatus, so frequently observed in cases of this kind. To help on evacuation, I follow up the above treatment with two enemas, composed as follows:—

1st.—Decoction of Linseed	250 grammes.
Glycerine	5 „
2nd.—Linseed as before.	
Chloral Hydrate	$2\frac{1}{2}$ „

(1 gramme = $15\frac{1}{2}$ grains.)

"This is given ten minutes after the former. In case the patient should vomit his first drench, I give him a second, exactly the same. Even when the weight of the dog is greater than 45 lbs., it is not necessary on that account to increase the dose. It is better to repeat it every two or three hours until purging begins, and to help this on by enemas of decotion of linseed and glycerine. This treatment must go on till the rectal tenesmus (straining) has ceased. With regard to feeding, as long as the patient does not seem emaciated, I forbid all solid food, but feed him on liquids, say, infusion of linseed and milk in equal quantities, to which may be added, thrice a day, chloral hydrate in the proportion of $2\frac{1}{2}$ grammes each time. Afterwards, when the patient is convalescent, I allow him solid food, but I continue the purgatives, reduced to one half. I go on with draughts of linseed water, milk, and chloral hydrate until recovery. This generally occurs in eight days. Such is the treatment which I have finally adopted after all sorts of experiments. It has given me absolutely positive results, and I am persuaded that if it were tried on a human subject affected with rabies, it would bring about his recovery. It costs little to try it, and I most earnestly wish that it could be tried. I should be glad if your readers would draw the attention of their medical friends to this subject, and get them to adopt my treatment, giving the veterinary man the chance of observing its results.—Yours faithfully, POURTALE."

The editor of *La Presse Vétérinaire*, M. Rossignol, makes the following "reflections" on M. Pourtalé's letter:—"To treat a dog affected with rabies is a dangerous thing; experiments of this kind can be tried only in our veterinary schools or by specialists protected against the always possible bite. Yet such experiments ought to be made, for, if facts should confirm M. Pourtalé's statements, medical men would be in possession of a secret which would enable them to combat effectively a disease against which all remedies hitherto employed have proved ineffectual. The subject is worthy of being treated seriously, and, therefore, I should be glad to see our veterinary schools attempting a serious verification of the Pourtalé method. Of course, the most careful and most minute precautions must be taken to protect the experimenters from the bites of their patients, but that ought not to be difficult when once a proper apparatus has been provided, and, first of all, a means of securing the patient. I have had long talks with M. Pourtalé; he has abundant faith in his treatment, and he invites everybody to verify it. Why should we not do so? M. Pourtalé states also that it is possible to protect dogs against rabies by vaccinating them. Why not give him the chance of verifying his assertion?"

DISINFECTION OF THE SURGEON'S HANDS.

Dr. Poten writing to the *Monatsschrift für Gynäcologie* says that he has been experimenting on the best means of disinfecting hands that have become dirty in the course of the day with medical or other work. Mere washing for five minutes with soap and water and a nail-brush produced extremely bad results, and these were but little improved when Dr. Poten tried a second washing, likewise for five minutes, with sublimate solution. It was found

that the sublimate had no lasting effect on the micro-organisms that gather on the skin. Dr. Poten found that the best results were to be obtained by washing the hands in alcohol after they had been carefully cleaned in the ordinary way with soap and water.

FLIES IN STABLES.

It is well known that one means of diminishing this plague is to exclude sright sunshine, and also that the greatest enemy of the fly is the swallow, which ought, therefore, to be encouraged to build its nest in or near every btable. Another good plan is to hang up bunches of mug-wort or common ferns, on which flies gather eagerly. These should be suspended by strings from the roof of the stable and removed at night-fall; a sack should be held underneath, and the string suspending the bunch of ferns cut in such a way that the bunch falls into the sack before the flies have time to fly away. It has been also recommended to whitewash stables every year about the end of February, and to add to every bucket of lime-water about $\frac{1}{4}$ of litre of cresolin; this is a most effectual cure for flies.

VETERINARY STATISTICS OF THE PRUSSIAN ARMY FOR THE YEAR 1894.

From the report recently published, it appears that during the year 1894 there were 29,005 cases of sickness amongst the army horses, or 37·9 per cent. of the whole number. This is one of the higher percentages that have been observed within the last twelve years, during which period the percentage has varied from 30 to 47. The percentage in 1893 was 2·8 lower, and in 1892 it was 1·5 higher. Chest diseases were responsible for a large proportion of the cases of sickness. Of the 29,005 horses 26,457 (91·2 per cent.) were cured, 1,053 died, and 282 were killed (together 4·60 per cent.). In addition to these, 369 (1·27 per cent.) were dismissed from the army; the remainder were still in hospital. This total loss ot 5·87 per cent. was equal to 2·23 per cent. of the total army strength, being 68 more horses than in the preceding year. The diseases are divided into the following groups: acute infectious diseases, 1,728, of which 1,306 were diseases of the chest (died 58); diseases of the nervous system, 257 (died 99); diseases of the eye, 571; diseases of the respiratory organs, 1,065 (died 134); diseases of the vascular system, 104; (died 69), diseases of the urino-genital organs 43 (died 7). There are reported 4,870 cases of disease of the digestive apparatus, amongst which are 3,662 cases of colic; the losses under this heading, including horses "dismissed," is 495 or 10·16 per cent. External diseases are divided as follows:— Diseases of the outer integument 6,873, of which 3,147 were wounds; hoof-diseases 2,615 (loss, including dismissals, 18); sandcracks 135, founderings 182. Of other disorders of the locomotor apparatus 10,664 cases are reported, 311 of which ended in death and 177 in dismissal; total loss thereby 4·57 per cent.

Amongst the cases of diseases of the digestive organs there figure not fewer than 821 of pustular inflammation of the mouth, all of which were cured. The animals attacked by colic, 3,662 in number, as above stated, form 12·6 per cent. of all the cases of sickness, or 4·8 per cent. of the army strength; of these 3,168 (86·48 per cent.) were cured, 493 (13·46 per cent.) died or were killed, and 1 was dismissed. The number of cases under this heading is the highest since 1886, and fifty horses more were lost thereby than in the preceding year. A continuous increase of colic cases is to be observed since 1887, when there were 2,147 only. The losses also are heavier from 1889 onwards (some 12 to 13 per cent.) than they were in the years that preceded 1889 (10 to $11\frac{1}{2}$ per cent.). This is with almost general consent attributed to the fact that from year to year new

substitutes in the way of fodder are given to the army horses, such as maize, rye, pease, beans, etc. If various tests with these substitutes have given no bad results, that proves nothing for general practice, for the simple reason that in these special cases particular care is taken with the materials. Eserin was administered with perfect success except in a few cases; arecolin was also administered in a few cases with success. Some of the principal causes of death in this category were as follows :—Primary rupture of the stomach, 36; secondary, in consequence of injury to the intestine, 56; rupture of the small intestine, 4; of the cæcum, 12; of the colon, 21; rupture of the diaphragm and consequent displacement of intestines, 17; involution of the small intestine, 56; intussusception of the rectum on itself, 4; lodgment of fæces in small intestine, 8, and in the cæcum and colon, 21. In the case of one horse, after an injection of eserinan intestinal stone, as big as a man's fist, was voided; in the dead body of another was found a similar stone, as large as a child's head, immovably fixed in the intestine just at the place where the colon joins the rectum.

DOUBLE OVARIECTOMY IN THE CASE OF A NYMPHOMANIAC MARE.

Dr. Langillotti-Buonsanti, Principal of the Royal Veterinary College in Milan, contributes the following interesting account of a case which came under his own observation, to *La Clinica Veterinaria*, from which we translate it direct:—"A bay mare, 15 hands high, about three years old, was brought to the College on 14th January last. Her owner informed me that he had run her in harness for more than three months. with perfect satisfaction and without accidents of any kind. One day in September, however, whilst she was trotting along a country road and drawing her accustomed load—a veterinary surgeon's trap—she was seized with a fit of madness, became ungovernable, and fell into a canal bordering the road, dragging along with her the carriage and its occupants. The canal was pretty deep, and a good deal of trouble was experienced in extricating the mare and the carriage therefrom. After this escapade the owner of the mare would trust her no more in his carriage, but hired her out to a farmer for working in the fields. She did no work, but she had become very irritable and very dangerous, kicking out viciously, and scarcely letting anyone approach her. In consequence she was sent to the veterinary college here for examination and treatment.

"On arrival I had her cast, with the usual precautions; then I proceeded to examine the vagina, with the help of the Polansky speculum, fitted with an electric reflector. The speculum penetrated with some difficulty on account of the hymen, which presented itself more distinctly than is usually the case, but after passing the entrance to the vagina the difficulty disappeared, because the hymen, in the form of a circular membrane, became completely dilated, forming simply one piece with the vaginal parts. The same fact was observed on introducing the hand. Then gradually, as the open speculum was withdrawn, it was observable how the hymen returned to its former position and presented itself again in the form of a circular membrane with an opening in the centre. The inspection brought out nothing of particular importance. The vagina was short and not very wide, the mare being a virgin. The cervical canal (cervix uteri), not protruding far into the vagina, was of regular formation; its perfect permeability was easily determined by manual examination, as the index finger could penetrate to the inside without difficulty. Digital exploration of the meatus urinarius was likewise performed, but with negative results, and a catheter was employed for exploration of the bladder, as the owner of the mare said he had from time to time observed calcareous deposits on the labia of the vulva. The decisive elements of the diagnosis, however, were furnished by the rectal

examination. The mare was laid on her left side with her hind-quarters raised; the right hand of the operator, when pressed against the left wall of the pelvis, found easily the ovary of that side in the form of a large oblong potato, easily grasped in the hollow of the hand through the wall of the rectum. When the operator squeezed it the mare neighed and struggled a good deal. The right ovary was smaller than the left, and rounder, but seemed larger than the normal, having regard to the size of the mare, her age, and the fact that she had never yet had a foal.

"The diagnosis thus left no room for doubt: the mare was subject to fits of nymphomania on account of the increased size of her ovaries, especially of the left; this was probably due to cysts, although the ovaries seemed hard to the touch. There was no course open but to perform ovariectomy. This was proposed to the owner, who seemed inclined to entertain it, but in order to overcome his objections and enable us to perform the operation, so interesting in the circumstances, a certain amount of compensation was guaranteed in case death should supervene. The operation was performed on 17th January, after the mare had been kept for two days on half rations and completely fasting for the twelve hours preceding the operation. As the weather was very severe at the time, it was determined not to proceed by our favourite method, namely, laparotomy, but to try the operation per vaginum. The mare's feet being conveniently fastened by the Raabe and Lunel hobbles, and the vagina as well as the external genital organs and the tail having been washed with sterilised water, it was an easy matter to make an incision in the upper wall of the vagina. The shortness of the vagina rendered easy the task of arriving at the ovaries without extending the arm very far, but of course it was impossible to bring them close to the incision. The difficulty of getting the left ovary, the larger one, into the chain of the *écraseur* was enormous and could not be overcome. The vagina was not only short but also narrow. The hymen was forcibly dilated by the introduction of the operator's fore-arm; the *écraseur* (extended along the fore-arm) entered, likewise forcibly, the pelvic cavity through the incision, but at the moment of applying the chain to the broad ligament of the ovary the operation proved to be quite impossible, because space was wanting to move the handle of the instrument, as the case demanded, and thus render possible the passing of the chain by the right hand on to the ligament of the ovary which the hand already held in its grasp. All this time the mare remained tolerably quiet and was quite docile but we had to abandon our efforts, as they proved quite fruitless.

"The only alternative was to cast the mare and complete the operation by laparotomy. We chloroformed her with our usual Dubois-Berr apparatus; of our usual pure distilled chloroforms we had to use 200 grammes (7 oz. av.). The ordinary operations connected with laparotomy were carried through without incident, scrupulous attention being paid to the prescribed rules regarding antisepties, but the search for and grasp of the ovaries presented greater difficulty on account of the intestines, which burdened the operator's hand, and this occupied a little longer time than usual. The left ovary, through want of looseness in the broad ligament, could with difficulty be brought close to the abdominal incision and was removed by the *écraseur;* for the right ovary the *écraseur* had to be placed right inside the abdomen. The wound was sewed up, beginning with the peritoneum and going on to the muscular layers and so to the skin, a drainage tube being previously inserted.

"The mare was kept completely fasting for 48 hours. A clyster was administered daily of borate of sodium, 100 grammes, and salicylate of sodium, 40 grammes (1 gramme = 15·43 grains). The temperature varied from 101° to 103° Fahr. Slight œdema, which showed itself below the abdomen, disappeared when we used scarification. Once a day we made

along the drainage tube an irrigation with a tepid solution of 1 per cent. corrosive sublimate, which was followed by pulverised ethereal solution of iodoform. As early as the first eight or ten hours after the operation, a tracheal wheezing began to be audible; this has been observed in other horses that have undergone chloroform narcosis. In consequence we made the mare inhale creosote vapour. On the third day we offered the mare a little food, but she scarcely tasted it. The temperature had risen to 104° Fahr., respiration 44, pulse very weak; examination of the thorax showed dulness on both sides. On the fourth day (21st January) the mare's condition had grown much worse, weakness very noticeable, temperature 105°, thoracic dulness increased. Digitalis was prescribed, but the mare died two hours afterwards, just four days after the operation.

"At the *post-mortem* there was found extensive bilateral pneumonia, with incipient gangrene; in the abdominal cavity a small quantity of blood-stained liquid. The margins of the vaginal incision were held together by a thin layer of clotted blood. In the abdominal incision the stitches of the peritoneal suture were lacerated; those of the muscular wall and of the skin were intact. The mare had evidently died from the acute pneumonia (severe pulmonitis), produced, without doubt, by the chloroform. The left ovary was full of cysts, one of which was very big, and weighed, without the liquid, nearly 50 grammes; the right ovary, bigger than the normal, showed also a few cysts. The case of a mare, less than three years old, nymphomaniac through cysts in the ovaries, if not unexampled, is certainly very rare."

A GHASTLY STORY FROM THE FAR EAST.
THE BLACK DEATH AMONGST ANIMALS.

Professor Janson of Tokio (Japan) writes to the *Archiv für wissensch. und prakt. Thierheilkunde* as follows:—"In the absence of statistical information in China, one has to depend for details as to the number of victims carried off every year by the plague, on the statements of the coffin-makers. From these it appears that last year in Canton alone, over 80,000 human beings were carried off by this fearful scourge. It has been observed there that animals take a very important part in spreading the disease amongst the people, and, indeed, that the disease always breaks out *first* amongst the lower animals. Several species are susceptible to it, as, for instance, rats, mice and swine, which sickened in Canton in great numbers. Sometimes animals suffering from the disease, or which had actually died of it, were consumed as food by the Chinese, and these people, of course, took the plague. A decree has been published forbidding the slaughtering of swine for food purposes till further notice. From the province of Yunnan, it is reported that the plague first broke out amongst rats, was then transferred to fowls, and so spread to swine and goats, and lastly, attacked horses and cattle. Very scanty details are to hand regarding the symptoms of this disease amongst domestic animals, but it appears that it runs in them a very rapid course, just as in the human subject, and always ends in death. According to the report of a French missionary, plague-stricken rats leave their holes and hiding-places, show no fear of man, stagger about in a strange way on their hind-legs, then quickly collapse and fall dead on the floor. In one of the quarters of Canton, before the outbreak of the plague amongst the human population, as many as 35,250 dead rats were collected.

"Kitasato has ascertained by examination amongst plague-stricken houses in Hong Kong, that the rats and mice found there dead had the same bacilli in their blood as were found in the blood of the human victims. On the basis of these observations I formulate the following conclusions: (*a*) rats and mice

are attacked by the plague in the same waytas men, and are to be regarded as a prolific means of spreading the desease among men; (*b*) it is extremely probable that the plague is conveyed from them to swine, which either, as in the similar case of trichinosis, become infected by devouring the dead rats or take the disease through the medium of human excreta; this may very easily occur, as the Chinese so frequently herd together with their swine; from the use of swine's flesh in this infected condition, the plague is farther spread amongst the human population, as appears from official reports in Canton; (*c*) according to all reports, ancient and modern, and on the basis of the facts established by Kitasato's investigations, it is to be assumed that other domestic animals are susceptible to the contagion of the plague; (*d*) according to Kitasato's statements, based upon experiments with domestic fowls, pigeons are immune against the plague.

"The plague presents itself as a sort of septicæmia, with a predilection for the lymphatic apparatus and the spleen, and might, therefore, in the case of the domestic animals, be easily confused with splenic fever. The distinction could only be established by reference to the characteristic bacilli, which are to be found in the blood even whilst the patient is alive. The microparasite is, according to Kitasato, a bacillus with somewhat blunted ends, which can be coloured with the usual aniline dyes, and that more distinctly at the ends than in the middle; these bacilli grow best on blood-serum at blood-temperature.

"In Hong Kong, the following symptoms were noted amongst human patients affected with the plague; after three to five days of incubation, the patient shows high fever and painful swelling of the lymphatic glands; this swelling generally begins in the femoral glands, and extends gradually to those of the pubes, arm and neck; the tongue is furred, the patient suffers severe headache and delirium, sometimes vomiting and diarrhœa set in, and the patient generally dies on the second or third day. The mortality amounted to 75 or 80 per cent. The bacilli are to be found in greatest number in the lymphatic glands and spleen. At *post-mortem* examinations the lymphatic glands show the principal lesions, and are very much swollen, with jelly-like infiltration of the surrounding connective tissues. The spleen is enlarged.

"The principal cause of the spread of the plague is said to be the filthy mode of life of the Chinese. According to trustworthy official reports there are in Hong Kong in every house a great number of swine, which are kept under the beds and in the kitchen, not only of the ground floors, but of the basement, and of the first and second and upper floors. Under every bed were found from five to seven big swine, and their excreta and urine trickled through the holes in the wretched flooring to the houses below! This incredible filthiness in their habits is shown in other aspects of Chinese life. The lower classes seldom, or never, wash their clothes, although they wear them for six years on end and even longer!

"As China has, now that the war between it and Japan is at an end, been rendered a little more accessible, I hope, by means of these communications, to draw attention to the intimate connection between human and animal plagues, and to provoke further investigations. I wish, likewise, to emphasize the fact that the bubo-plague on the island of Hainan and in the north of Tonquin, which borders on the notorious Chinese province of Yunnan, has been raging since the end of 1894. Simultaneously with this, a destructive plague has been raging amongst the cattle and buffaloes of a district in Tonquin; this plague amongst the cattle has been considered by Dr. Vergin, who was sent out there by the French Government, to be identical with the bubo-plague amongst the human inhabitants of the district."

PURPURA.

[The following was found in the rooms of a student after a recent examination. We trust that he is now qualified and that he has gone to a place where such muses cease from troubling.]

The swellings and petechiæ are not only on the skin,
But the organs, mucous membranes, and subderma have them in,
The disease is not contagious and you can't inoculate,
You can say he took the poison with the aliment he ate.
The hæmorrhage is likely due to altered vessel wall,
The largest in the lungs are found, while in the nose they're small,
The skin beside the bleeding may ulcerate and crack,
And the nasal mucous membrane show a bloody-ulcered track.
Hæmorrhage is common in the substance of the bowel,
And petechiæ in the muscles, myocardium as well,
In the lungs, the spleen, and kidney you may have extravasation,
And yet the vital fluid shows but little alteration.
Remember that the swellings at first are often small,
That confluence enlarges them, that they're painful not at all,
If by chance the tumefaction should quickly disappear,
You can lay your bottom dollar that the patient's end is near.
About the pulse and temperature your answer may be formal,
While doubtless later much increased at first they're often normal,
Watch no less when he's doing well and don't be too elate,
Lest œdema of the nose and throat, the "case" asphyxiate.
Another case of sudden death is some internal bleeding,
Although he may be doing well, his breathing calm, and feeding,
Other ailments that have swellings and the petechial spot—
They are strangles, glanders, anthrax, and the whole blood-poisoning lot.
By ergot, iron, turpentine, with this disease we grapple,
Or Lugol's iodine 1 per cent. injected down his thrapple,
Quinine, carbolic, potas. chlor.; tracheotomy if you must,
But don't foment the swellings for you'll only make them bust.

Notes and News.

An interesting gathering of veterinary students took place in the University Hotel recently, when Principal Williams and Professor W. O. Williams entertained the students and teachers of the New Veterinary College, together with a few friends, to supper. Upwards of 120 gentlemen were present. Principal Williams presided, being supported by, among others, Mr. Skirving, Niddrie Mains; Professor Ivison Macadam, Professor Bradley, and Professor Davies. The toast of "The Profession" was proposed by Mr. Phelan and acknowledged by Professor Bradley; Professor Macadam gave "The Students," for whom Mr. R. Williams replied; and the chairman responded for the toast of "Our Hosts," proposed by Mr. A. Connell. A very pleasant social evening was spent, an excellent programme of music being rendered.

Tuberculin.—At the Académie de Médecine M. Grasset read a paper on the early diagnosis of phthisis in man by means of injections of tuberculin. Everyone understood the utility of detecting the nature of this malady in its incipient stage, but all practitioners are well aware that the diagnosis is far from being easy and conclusive, for the bacilli do not appear in the expectoration until a

relatively late period. The difficulties are still further increased where the tuberculosis is seated in the bones, the brain coverings, etc. Consequently, a new sign, if it be sure and without danger, is not to be despised. Tuberculin seems to furnish these two conditions, as testified by that great authority, M. Straus, who declared that "this substance constitutes an excellent diagnostic means in incipient phthisis." The tuberculin was furnished M. Grasset for his experiments by the Pasteur Institute, and the dose employed was infinitesimal but sufficient, 150th of a grain. The mode of using is simple. The patient is kept in bed two or three days, and his temperature taken morning and evening, and marked. The hypodermic injection is then made once a day for two or three days more in the thigh, and the temperature carefully registered three times a day. No abscess follows or any local irritation. M. Grasset cited a series of cases in which he was able to arrive at an exact opinion on the nature of the affection. A man, aged 43, entered the hospital presenting symptoms of rachidian meningitis, without any external sign of lesion of the vertebræ. For four months he had been suffering from inter-costal pains, coming on in paroxysms, the spine was painful to pressure, especially over the dorsal vertebræ. The left eye showed symptoms of exophthalmia, while the upper lid dropped. The body had evidently been wasting for some time. The temperature was normal, but after the injection of the tuberculin, it rose to 100°. M. Grasset pronounced the case to be one of tuberculous meningitis. A patient, aged 23, presented the symptoms of Addison's disease. He had had a costo-vertebral cold abscess, which got well after operation. The bronzed colouring had commenced five months before he entered the hospital, and for the previous month he had a slight cough. At the apex of the lung in front, expiration was found to be slightly prolonged, and behind, vesicular expansion was diminished; there were no bacilli in the sputa. The temperature, which had been oscillating between 97° and 98°. rose to 100° six hours after the injection of the tuberculin, justifying the tuberculous nature of the disease of the renal capsules. After giving the details of several other cases (14 in all), the report concluded by stating that the results obtained warranted the prosecution of further clinical experiments which would permit the Academy one day to draw up instructions for diagnosis of tuberculosis in man by tuberculin as it has been called upon to do in the case of the bovine species. M. Weber read, in answer to a letter from the Minister of Agriculture, consulting the Academy on the value of tuberculin as a means of diagnosing tuberculous disease in the bovine species, a report, of which the following is an abstract:—Tuberculin at the dose of from six to ten grains provokes in tuberculous animals a rise of temperature attaining from two to five degrees, a reaction sufficient to affirm the existence of tuberculous lesions, in no matter how slight a degree, whereas the same dose has no appreciable effect on non-tuberculous animals, although they may be attacked by grave lesions of the lungs or of the other viscera. The febrile reaction appears between the twelfth and fifteenth hour after the injection, and lasts several hours. It was said that tuberculin produced no reaction in certain animals recognised tuberculous at the autopsy. The fact is true, but these animals are always in such an advanced stage of the malady that the diagnosis is easily made by the ordinary methods of examination without having recourse to tuberculin. The reproach was also made that tuberculin hastened the evolution of the disease. This objection has no foundation, for tuberculin presents no danger to the animal. Nothing is so easy to-day as the removal of tuberculous disease from a stable; it is sufficient to submit all the animals to the tuberculin test, separate the healthy animals from all those which show a reaction after the injection, disinfect the stable, and allow no animal to enter it without careful examina-

tion. In concluding, the speaker proposed the following resolution :—Tuberculin is an excellent means of establishing the diagnostic of bovine tuberculosis, and its employment should be recommended." (Adopted).—*Medical Press.*

THE ARTIFICIAL PREPARATION OF CAFFEINE.—The January number of the journal of the Berlin Chemical Society contains a short paper by Professor Emil Fischer of Berlin (the successor in Berlin University of that world-famous chemist the late A. W. von Hofmann) and Herr Lorenz Ach, of which the outcome may be very far-reaching. These gentlemen have just succeeded in synthetising caffeïne (also called theïne), the constituent of tea and coffee, which imparts to these their invigorating and refreshing properties. In other words, they have carried out the last stages in the building up of this extremely complex chemical compound from other simpler (if still complex) ones, which in their turn are capable of being prepared from the four elements, carbon, hydrogen, oxygen, and nitrogen. Caffeïne, or theïne, belongs to the class of chemical substances known as the vegetable alkaloids, a class which embraces quinine, strychnine, morphine, nicotine, and many other compounds of the highest importance in medicine. But although it may be safely predicted that, with the rapid growth of organic chemistry, the artificial production of the many and various alkaloids will be merely a question of time, there have been up to the present only a few of them synthetised, the difficulties to be overcome being very great. It would, of course, be quite out of place to enter here into the complicated series of chemical reactions by which Messrs. Fischer and Ach have built up caffeïne in the laboratory; let the statement suffice for the present :—The amount of caffeïne in different teas varies considerably, but we shall not be far wrong in putting it at $2\frac{1}{2}$ per cent. on the average, while coffee contains about 1 per cent. In every 100 lbs. of tea, therefore, we use $2\frac{1}{2}$ lbs. of caffeïne. The imports of tea to the United Kingdom in 1889 amounted to 221,602,660 lbs. the actual consumption being 185,621,800 lbs. (or 4·9 lbs. per head of population), equivalent to 4,640,545 lbs. of caffeïne. These figures show what an immense consumption there is of caffeïne in the form of an infusion of tea. The pure substance (prepared from tea) is likewise now used to some extent for medicinal purposes. The new process is merely a laboratory one, and its cost would be entirely prohibitive of its being applied in its present form on a commercial scale. But the discoverers are careful to point out that this will no longer be the case if one particular stage of the method should eventually prove capable of accomplishment in a more direct way. Whether the artificial preparation of caffeïne and its consequent cheapening would be an actual blessing to the world in this age of "nerves" remains to be proved. This discovery—a brilliant one from a scientific point of view—has at all events brought us within measurable distance of it.

HOW CAMPHOR IS MADE.—Many of the seeds of the camphor tree have been sent to the Department of State from Japan, in the hope of affording to the United States a chance to add this valuable substance to its vegetable product. The tree is a species of laurel, and it grows in extensive forests in the mountainous regions of the south of Japan, far from the sea. Large groves are owned by the Japanese Government, the wood being very desirable for shipbuilding. Many of the trees attain an enormous size, often measuring twelve feet in diameter and sometimes attaining twenty feet. The seeds or berries grow in clusters, resembling black currants in size and appearance. The fine grain of the wood renders it particularly valuable for cabinet work. The camphor is a resinous gum. To get it the tree is necessarily destroyed, but, by a stringent law of the land, another is planted in its stead. The simple method of manufacture employed by the natives is

as follows:—The tree is felled to the earth and cut into chips. A big metal pot is partly filled with water and placed over a slow fire. Then a wooden tub is fitted to the top of the pot, and the chips of camphor wood are placed in this. The bottom of the tub is perforated, so as to permit the steam to pass up among the chips. A steam-tight cover is fitted on the tub; from this tub a bamboo pipe leads to another tub, through which the enclosed steam, the generated camphor, and oil flow. This second tub is connected in like manner with the third. The third tub is divided into two compartments, one above the other, the dividing floor being perforated with small holes to allow the water and oil to pass to the lower compartment. The upper compartment is supplied with a layer of straw, which catches and holds the camphor in crystals. The camphor is then separated from the straw, packed in wooden tubs of 133 pounds each, and is ready for market. After each boiling the water runs off through a faucet, leaving the oil, which is utilised by the natives for illuminating and other purposes. Adulteration of camphor gum is practised mostly by adding water just as far as the buyer will tolerate it. Sometimes the purchaser will find that twenty pounds of water have run out of a tub in twelve hours. The unadulterated article, known as "old dry," can sometimes be bought, but not often. In a letter on the subject newly received by the Department of State, Consul Smithers writes from Osaka, Japan, that it would be very desirable to send a competent agent from this country to Japan, who should visit the camphor-producing districts and study the processes of manufacture, packing, &c.

Mr. William Hunting, F.R.C.V.S., the veterinary expert employed by the Canadian Government, has reported in very favourable terms upon the merits of the Canadian horses which are being imported in such large numbers to Glasgow and to various English ports. He states that they are now very well known in London, and expresses the opinion, from the experience he has had of hundreds of them, that they have worked in London streets for years, that there are no better horses. Their manners, constitution, feet and legs, are all that can be desired, and he thinks they are destined to become even more popular than they are at the present time. He strongly urges that no animals under five years of age should be sent over. Occasionally younger animals are imported, but, like immature home-bred horses, they are not able to stand hard work. Mr. Hunting's report has been made in consequence of some criticism of Canadian horses that has appeared, the burden of which is that they are not suited for city work, and that although their first cost is cheaper than home-bred animals, they are yet dearer in the long run. Another complaint was that as the cattle market has been closed to our Canadian cousins, they are seeking to demoralise the horse market, and that the lower prices at which the animals were offered was proving prejudicial to the home horse-breeding industry. Mr. Hunting concludes his report by stating that, in his opinion, there are no better "vanners" than Canadian horses when five years old and in proper condition, and that he knows of no large firm having once used them that have discontinued buying them.

Sir Thomas Gibson-Carmichael, M.P., and Tuberculosis.—The interest which has been excited in Scotland by the plucky resolve of Sir T. D. Gibson-Carmichael, M.P., to retain no animal in his grand herd of Aberdeen-Angus cattle at Castlecraig which cannot successfully undergo the tuberculin test, is bound to extend south of the Tweed. He has practically pledged himself that no animal shall be sold from the herd for breeding purposes unless it has been tested for tuberculosis, and has failed to give the temperature reaction associated with the presence of the disease. Next year

Sir T. Carmichael will take another step, for of the polled bulls he will then offer at the Perth spring sale every one, despite high breeding, will be warranted free from tuberculosis; in other words, no bull will be put forward which has not successfully undergone the tuberculin test.

Electrical Photography in Edinburgh, Remarkable Results.—Dr. Dawson Turner has been applying the Röntgen photography to practical purposes of surgery. One of the latest uses to which he has been successful in putting it has been the discovery by its aid, in the lower thumb joint of a lady's hand, of a needle, which had been there for years, and which, by ordinary surgical processes, the surgeons had failed hitherto to discover. The hand of the lady was photographed 18th February at the Surgeons' Hall, Edinburgh, and the needle came out quite distinctly on the plate as a black line in the thumb joint. It will now, of course, be possible to operate upon it with some chance of success, seeing that the location of this foreign substance has been accurately determined. An interesting photograph has also been taken in Chalmers' Hospital of the hand of a patient who has been suffering from bone disease in the third and fourth fingers. It had been intended to amputate the fingers at the junction with the hand, but the photograph, it appears, made it plain that the disease had not only laid hold of the fingers, but had penetrated to the bones of the hand as well. The surgeons who have the case in hand will therefore have a consultation as to whether the hand must not now be amputated at the wrist. What the new photography, it is pointed out, has done in this case is to save the patient from two amputations. Had the fingers only been taken off now it would have been necessary to have another operation by and by at the wrist, in order to endeavour to stop the progress of the disease. The demand which has sprung up for Crooke's tubes, by means of which the new electrical photography is conducted, has been so great that they have become exceedingly scarce and difficult to get, and an effort is now being made to produce them in Edinburgh.

Brumbie Horses of Australia. A strange Equine variety.—The Brumbie horse of Australia, though not a distinct equine variety, possesses attributes and qualities peculiar to itself, and, like the wild cattle and wild buffaloes of Australia, is the descendant of runaways of imported stock. At no distant period of Australian pastoral history the Brumbie was as great a scourge to the western pastoralist as the rabbit has since become; but a scourge, fortunately, that could be dealt with more easily, and by perseverance abolished. In Brumbie country, the passing traveller must tend his horses closely; for the young Brumbie stallions, constantly driven from their haunts by the older sires, wander in search of companions, and show marvellous intelligence in taking these, when found, into seclusion. It is at all times a difficult matter to recover stray stock from the Brumbie mobs. The term "with the Brumbies" is a common one throughout the bush of Australia to signify hopelessly lost. Portions of New South Wales and southern Queensland were some years ago almost devastated by Brumbies; and all sorts of devices were resorted to by squatters to rid themselves of the pests. Many sheep-owners fenced in their water-holes with barbed wire in such a way that nothing larger than a sheep could enter to drink. In this manner tens of thousands of horses perished. A crush—that is, long lines of parallel fences just wide enough for one horse to pass at a time—was erected; they were driven into this long lane, at the end of which stood an expert, armed with a keen knife. As each animal passed, its jugular vein was severed, and the bleeding creature tore madly away to its native scrub, only to stagger and die from loss of blood within half a mile of the trap. This device, though barbarous, did away with the difficulty of removing carcasses, and became the

universal method of destruction. In this work of destruction animals showing extra quality were occasionally reserved for use ; but in order to enable the horsemen to drive them away, it was necessary to stop their galloping, and this was done very simply. A packing needle and strong twine were run through the point of each ear, the twines being left in ; these were then tied under the horse's chin, bending the ears down on the cheeks. Tied in this way a horse will not gallop, but may be turned and driven quietly.

Correspondence.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—I think it is quite time that the "surgical operations" we, as veterinary practitioners, *may* perform in the eyes of the R.S.P.C.A. should be specified, with the conditions which warrant us in performing them. The actions of this Society are really becoming too serious, and soon we shall not be able to operate at all, without a threat, if not an action at law, from the R.S.P.C.A.

If we may not apply surgical interference to deformities, &c., of the tail, limb, or any other part of the body, without this wealthy Society coming down upon us, I think the sooner we *try* to make ourselves safe the better.

Whether "nicking" is justifiable in ALL cases I am not going to give any opinion upon ; but I may say, without contradiction, I believe that it is frequently performed by educated veterinary practitioners with beneficial results to the animals and their owners. What looks worse than an otherwise good-looking animal carrying his tail on one side or close to his rump ? and I have seen the latter position so excessive that the crupper could not be worn without chafing. If it is unlawful for us to relieve this state of things then it ought to be unlawful to do any other painful operation. There is far more cruelty perpetrated in "spaying" pigs than by any operation that I am acquainted with, and if any operation ought to be stopped on a plea of cruelty, this ought.

I remember being called cruel, brutal, and I don't know what, by a gentleman who happened to come into my yard whilst I was operating on a horse for the reduction of a very bad "Thoroughpin," and his first remark was, "Why don't you chloroform the poor beast ?" which, I need hardly say, had already been done, the animal at the time lying perfectly still—for he was well under its influence—and to which I drew my friend's attention ; but he was so horrified at the sight (probably of the blood) that he mentions it to me to-day whenever he meets me.

Perhaps you would like me to give you a short sketch of what I did, as I do not know whether anybody has ever succeeded with such a formidable operation on the horse. The bursa of the flexor pedis perforans, as it passes over the hock (that marked *b* in Fig. 136 of Dollar's translation Möller's Surgery) was distended nearly the whole of its extent, at one part to the size of a half-quartern loaf, and just below the "chestnut" it appeared to be all but through the skin. The animal had been "fired" some six months previously, without any beneficial result, and he was now very lame and useless.

The owner, however, prized the animal very much, as it had been such an excellent performer over a country, and was anxious something should be tried. I, therefore, decided to open the bursa, which I did by slitting it from top to bottom, exposing the tendon, taking out an eliptical piece of the sac, and then bringing the edges together again by sutures. To my surprise, it went on splendidly for three weeks, the animal putting his weight on the limb, frequently resting the sound one, and walked over from side to side in the stall, apparently without inconvenience; but, of course, it was in slings. Although the secretion of synovia was profuse, still it was getting less and less every day, and

the wound healing; but, unfortunately, the animal became "griped," and died in twelve hours of "enteritis." On the whole, however, the result of the operation itself was encouraging, and worth repeating when an opportunity offers itself, providing the R.S.P.C.A. does not summon me, and even if they did not get a conviction (they certainly would if my friend were on the bench), make it very unpleasant and expensive. Moreover, I am rather afraid I should stand precious little chance of a good word from some of our members, for I think I saw it said, not long ago, at one of the Society's meetings, "that it would be a bold man who dared open this bursa"; but an eminent surgeon tells me it is a comparatively common operation in the H.S., and, therefore, we ought not to despair of success in our patients, if our clients will only go to the expense and the R.S.P.C.A. will permit us to operate without molestation.

Trusting this will offend no one, as it is certainly not so intended by—
Yours, &c., GEO. A. BANHAM, F.R.C.V.S.

"A FEEBLE DEFENCE."

To the Editor of THE VETERINARY JOURNAL.

SIR,—It has not usually been my custom to force myself on the hospitality of an opponent, and personally I am unable to appreciate the want of "truly courteous not to say manly feeling" in availing myself of the pages of a neutral journal for the purpose of answering an unprovoked attack, but as you have with such magnanimity pressed upon me the desirability, nay the paramount duty, of replying to your remarks in your own pages, I am by no means averse to that course.

But firstly permit me to return thanks for the quite unmerited honour implied by my being made the subject of editorial remark for two months in succession—a distinction which my youth and inexperience and general insignificance scarcely deserved—and to further say that even my limited journalistic experience enables me to recognise in "errors and sophistries—poisoned arrows and poisonous doctrine" merely a delicate method of complimenting an adversary on what we regard in a friend as "closely-reasoned and altogether admirable" argument.

I am not concerned to defend my good manners nor even my controversial methods; but before proceeding to the main issue I should like to express my acknowledgments for being included amongst all the "other authorities," and also briefly to point out that as I had made no reference to any person whatever at the meeting of Committee, the suggestion that anyone "was quite justified in using it—[*i.e.*, a report of the proceedings of the Examination Committee]—nay, bound to use it in self-defence," savours somewhat of the mental attitude of the wolf towards the lamb, while the principle that a person into whose keeping confidential information comes is not bound to respect it because it is not first hand, if recognised by certain peculiar codes of honour, does certainly not obtain in ordinary circles, where the receiver is usually thought worse than the original delinquent.*

Coming now to questions of fact, I think I may conclude that as in Mr. Barrett's letter the position which you, Sir, "took up has been completely vindicated," in proof of which you appended it "as the antidote to Mr. Dollar's poisonous doctrine," and as it "sweeps away all Mr. Dollar's sophistries and dispels them for ever," it is to that, as expressing your views, that I may chiefly direct my attention.

* Mr. Dollar is again reminded that the information referred to was not confidential. Even if it had been. and even if I had been a member of the Educational Committee, and present when Mr. Dollar seconded the resolution, I think that I should have neglected my duty by allowing Mr. Dollar's vagaries to be hidden under a bushel.

I believe that Mr. Barrett is my senior by at least half a decade, and I therefore accept his introductory paternal maxims with all the submission they deserve. With the rest I may deal very briefly. Mr. Barrett thus summarises his points :—

"Students who possess any certificates in Divisions I., II., and III. (excepting University of Wales) are entitled to Registration without enquiry; those possessing any Certificate in Division IV. must show that they passed all the subjects at the same time; and lastly, a student who possesses none of these certificates must pass the preliminary examination at one and the same time."

In another place Mr. Barrett shows that by the words "preliminary examination" he means "the special examination of the [General Medical] Council."

Firstly, then, I would point out that the General Medical Council holds no examination of any such kind, either "special" or general. That is Mr. Barrett's first error. And as his whole fabric is reared on that error, it collapses along with it.

Secondly, "Students who possess any Certificates in Divisions I., II., and III. are "*not*" entitled to registration without enquiry." That is Mr. Barrett's second error.

Thirdly, as the General Medical Council holds no preliminary examination of its own, "a student who possesses none of the certificates" *cannot* pass the preliminary examination either "at one and the same time" or any other time. That is the third and last of Mr. Barrett's errors, and completes the triumphant refutation of my "poisonous doctrines" in, I hope, a sufficiently satisfactory manner. Mr. Barrett has, unfortunately, allowed his imagination to dictate his facts and his wishes to dominate his logic. If he, or any other person, questions the statements here set forth, I may say they are given on the authority of the Medical Registrar, of 299, Oxford Street, London, W., to whom I beg to refer all enquirers.—Believe me, Sir, your obedient humble servant, JNO. A. W. DOLLAR.

SOUTH AFRICAN HORSE SICKNESS.

To the Editor of THE VETERINARY JOURNAL.

SIR,—Having seen several cases of this disease, and having had the privilege of discussing the subject personally with Dr. Edington when I was staying for a few days at Grahamstown, South Africa, no one can be more alive than I am to the fact that we are indebted to him for all the exact knowledge we possess about horse sickness. I am much obliged to him for pointing out the error I fell into inadvertently when seeking a handy name for "*paard ziekte*."

The brilliant results achieved by Dr. Edington in the investigation of this disease "shows up" all the more conspicuously Dr. Sander's futile researches. This German doctor (see *Journal of Comparative Pathology*, December, 1895), evidently unaware of the work done by his predecessors in the same field, merely repeated the exploded theory that horse sickness is anthrax.

I would be deeply grateful to Dr. Edington if he would throw some light on the mysterious subject of "salted" horses.—Yours faithfully,

14*th March*, 1896. M. H. HAYES.

Communications, Books, Journals, etc., Received.

Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); Bulletin de la Societe Centrale de Medicine Veterinaire (4me trimestre 1895: Paris); Le Bulletin Veterinaire (Orleans); L'Echo Vétérinaire (Liége); Annales de Médecine Vétérinaire (Brussels); Berliner Thierärztliche Wochenschrift (Berlin: Richard Schoetz); Oesterreichische Monatsschrift für Thierheilkunde (Vienna: M. Perles); La Revista Veterinaria (Buenos Aires); La Revista Agronomica (La Plata); La Clinica Veterinaria (Milan); Il Nuovo Ercolani (Pisa).

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

MAY, 1896.

ESSAY ON "IMMUNITY."*

BY "ECRIVAIN."

(*Continued from page* 252.)

QUARTER-ILL.

THIS is a disease against which immunity is easily given by inoculating the virus taken directly from a diseased animal, without any attenuation, into the jugular vein, taking care that none of it reaches the connective tissue. The usual method of obtaining material for injection is to take the blackest part of the tumour of an animal just dead of the disease, cut into small pieces, triturate in a mortar with distilled water, and filter through several layers of muslin, previously wetted with water, and of this filtrate inject five to ten drops. Another way is to inoculate guinea-pigs, causing the formation of a tumour, and treating this in a similar manner. Others, again, use the desiccated virus obtained by drying the diseased tissues or black tumour.

PLEURO-PNEUMONIA CONTAGIOSA.

Immunity against this disease is of great importance and should be carried out on all healthy animals in contact with the diseased, and certainly should come before slaughter, although the latter has been the means of stamping it almost out of this country, but still at a great expense. It has not yet been fully determined how long the immunity lasts, but still, if it carries over the outbreak it would save the life of many a healthy animal. The virus is taken from the inter-lobular connective tissue of the lung in the first stage of a mild attack, when it will be loaded with a semi-fluid exudate. The fluid is collected, filtered, and put into sterilised tubes,

* Read before the Edinburgh Veterinary Medical Society.

which are afterwards sealed by the blow-pipe. The tip of the tail is the part selected, and scarification is quite sufficient on the under surface, one drop of the filtrate being quite enough for protection. Some make an incision and use wool soaked in the virus ; others inject into the jugular, and others, again, into the aural vein. No animal should be injected with a high temperature, or yet with any other disease, or even bruises. There has been much argument whether inoculation produces the same disease or not, but whatever it produces, it is a great satisfaction to know that it produces immunity.

FOOT-AND-MOUTH DISEASE.

If the virus of this disease reaches the mucous membranes, the animal at once contracts the disease, but it is supposed that intravenous injection or small doses under the skin gives immunity against another attack, for a short period only, and this mere apology of immunity, if it can be called such, probably explains the reason why an animal is only attacked once in a season, but still at the same time, cattle may have it more than once during the same season in some cases, so the immunity in this case is still very doubtful.

VARIOLA VACCINA.

This disease runs a mild course and renders the animal immune against a subsequent attack, and I may add here, that people who milk such cows in this disease with sores on their hands, contract the disease in a mild form, and are immune against the human small-pox.

VARIOLA OVINA.

French veterinarians recommend inoculation in this disease, and speak highly of it, and go as far as to say that one in four hundred is the mortality after inoculation. Professor Gamgee in this country condemns it, and says it increases the centre of contagion.

TETANUS.

Under the influence of gradually increasing doses of tetanus poison, the fluid constituents of the body, more particularly the serum, acquired the property of making the poison harmless, and if this antitoxine serum be injected into another animal, the latter becomes for a time immune. In animals so treated with the toxine, the first result is the production of antitoxine serum and as the treatment is

continued with gradually increasing doses, each re-action is followed to a certain point by an increase of antitoxine. The animal has now acquired more or less complete immunity, and its blood contains the antitoxine, but there come a time when in consequence of the impossibility of giving sufficient virulence, either in quantity or weak in quality, no further re-action takes place, no more antitoxine is produced, and that already developed ultimately disappears from the blood and serum, and if now this serum be inoculated into a susceptible animal, no immunity is given, but the immunity of the original subject remains. It is quite clear that in this stage the antitoxine properties, which have disappeared, cannot explain the continued immunity; but here again comes the great theory that the cells of the body which were at first susceptible are now rendered insusceptible. In a Berliner paper of medicine, it is stated that testing the duration of immunity afforded by serum from various sources, it was found that rabbits treated with serum from the horse, the immunity was lost in sixteen days; in rabbits treated with serum from dogs, was lost in fifteen days; and in dogs treated with rabbit's serum, the immunity lasted for twenty-one days. In this experiment the various kinds of serum were of the same immunising power, and made so by using carefully proportionate doses. From these results, the conclusion may be drawn that the immunity which the serum will give, is different in serum of different animals, and that as a rule the longest immunity will be obtained if an animal is treated with the serum of an animal of the same order.

CATTLE PLAGUE.

For many years attempts have been made to render cattle immune against this disease by the inoculation of the virus, but it was always found that there were strong objections to such a procedure; in fact, when this inoculation did not cause as serious an outbreak as the natural malady, it at least maintained the existence of the scourge. Since, however, the introduction of the attenuation of the viruses by Pasteur, attention has been paid to the weakening of the virus of cattle-plague. By inoculating cattle with the strong virus, the blood, urine, nasal mucus, and milk of the animals in about four days contains the poison. At a more advanced period of the disease, a variety of organisms are seen in these fluids, but investigations have not yet decided which of them is the active agent in the production of the disorder. Experi-

ments have proved, however, that by passing the virus through some of the smaller animals, as the guinea-pig, or by exposing it to a high or low temperature, it becomes attenuated. When this attenuated virus is inoculated into healthy animals, they are no longer susceptible to the infection, and the serum of such creatures when injected into non-protected animals in localities where the plague prevails diminishes their receptivity of infection.

These promising investigations are still being continued, but already enough has been accomplished to allow of hope to be indulged that India, Russia, and other places where it appears will soon be benefited by it.

SWINE PLAGUE.

By passing the virus of this disease through pigeons it is greatly increased in virulence, while by passing it through rabbits it is diminished, consequently a virus was obtained from the rabbit which produced only a mild attack in pigs, and, after recovery, left complete immunity. This way of giving immunity, which is Pasteur's, is not always certain, as a few of the pigs succumb. Lorenx has obtained a better principle, which consists of inoculating serum from rabbits or swine rendered immune by an attack of the disease, or by artificial inoculation. He has also prepared from the serum, which contains the acting principle, some fluid which has removed the inconvenience of inoculating large quantities of serum. This preparation is, so far, not public. We have seen, then, that injection of serum from these immune animals protects against swine fever. This result is almost constant, and may be obtained not only by injecting serum at the same point as virulent blood, but also by the introduction of it at points more remote. If rabbits are immunised against this disease, and then virulent blood, which would soon kill witness rabbits, be injected under the skin, a local suppuration is manifested at the seat of inoculation, and the animal recovers, immune. The serum injected into the jugular vein, simultaneously with an injection of strong virulent blood under the skin preserves equally well; indeed, the injection of the strong virus may precede for a short while the inoculation of the attenuated, but should the strong virus be injected into the veins at the same time as the serum, or a little time afterwards, the serum only retards death. To prove this, an experiment has been carried out, which is as follows:—Two rabbits were taken, one was injected with

virulent blood and attenuated serum into the auricular vein, the other with virulent blood only; the first died in forty-two hours, and the latter in five hours. All rabbits vaccinated against hog cholera, furnish vaccinal serum, and the serum obtained from blood withdrawn five days after the proof inoculation, is as active as that withdrawn at more advanced periods.

It is very true that in a vaccinated animal, the leucocytes are more numerous, and the question might be asked whether the toxines were in the fluids of the blood or came from these cells. This point is still very doubtful, but suppose an india-rubber ring is placed tightly at the base of a vaccinated rabbit's ear, the œdematous fluid collected in the first stage is almost free from leucocytes, yet that fluid if inoculated into non-immunised animals gives them immunity.

In conclusion of a hypothetical subject of this description I have little more to add. There is one point which I might have brought out under the heading of inherited immunity, and that is: Is immunity hereditary and permanent? It is possible no doubt for immunity to be conferred upon the fœtus in utero, during an attack of a specific disease on the mother, or by inoculation during a state of pregnancy, and for that animal when born to maintain it, but can it be possible for an animal immunised before any stage of pregnancy, and then, when that time comes, to hand it down to the offspring? This fact still remains very doubtful.

Immunity produced by an attack of a specific disease must, then, be looked upon as an acquired adaptation of the cells of the body to the specific poison of the special microbe of that disease, and the process of recovery from such an attack is really the development of such immunity, which gradually passes into a more complete form during the course of the disease, and remains for some time, or for a lifetime after the animal has recovered. The antagonism of the products of one organism on another which occurs in mixed infections can never, in all probability, act directly in the body, but through the agency of the cells in the body. Such action may come to play a most important part in holding in check the active poisons until an immunity can be acquired. On the other hand, we may look forward to some future time when it will be possible to procure, by the action of one organism in the body neutralising the action of another, or by means of some antagonising drugs, a method of treating and ameliorating diseases.

ESSAY ON VIVISECTION.*

BY MR. W. D. SIMPSON.

MR. CHAIRMAN AND GENTLEMEN:—The subject which I have the pleasure of bringing before you this evening, viz., Vivisection, although differing somewhat from the usual subjects submitted to this Society, is one of some importance to the veterinary surgeon, and is one which of late years has been made the subject of hot debate, and has been tossed up and down in discussions, where feeling has played as large a part as argument. It has thus become enveloped in a dust-cloud of words, sweeping charges, and irrelevant recriminations, in which it is difficult to keep sight of the central object. The first duty, then, of any one, who wishes to see the truth for himself and to show it to others, is to get rid, as far as may be, of all this turmoil, at least; to keep the door of his own mind close shut against it; to silence any strong prepossessions for one side or the other, and to strive quietly to see the thing which is—not that which he hopes, or fears, or thinks may be. The point chiefly in dispute is the rightfulness of giving pain to animals for certain purposes, consequently, the question which meets us at the outset of our inquiry is—What is pain? Pain (like many other words upon which much depends) is used with a good deal of ambiguity. It is often far from clear even to the speaker, whether he means by it the effect produced upon the nerves or upon the organism; whether he is thinking of what the nerves feel, or of what the creature feels. Yet there is a deep distinction. One often hears it said that a person has undergone a very painful operation, but that he did not feel it because he was under chloroform. As soon as we look at this critically we are inclined to ask, If he could not feel he could have no pain; and if he had no pain, how was the operation painful? And the criticism seems valid. There is evidently a confusion between two meanings of the same word, and confused speaking leads to confused thinking. Let us therefore avoid both by clearly defining the sense in which we use our terms. A moderate stimulation of a nerve produces an agreeable or a useful effect. Nerves were meant to work, and for each there is a degree of activity which is normal and pleasant. Beyond this point, stimulation becomes distressing and injurious, and, with sensory nerves, passes into pain. Pain may therefore be described as the result of the excessive stimulation of a nerve. Of course, if the brain is narcotised

* Read before the Edinburgh Veterinary Medical Society.

it is not affected by this stimulation, though it takes place just the same; and therefore it is not nonsense to talk of a painful operation being performed without pain. But when the brain is awake, and working healthily, it takes note of the excessive stimulation; we become conscious of it, and the result is feeling. This capability on the part of a nerve of being affected by stimuli (independent of the organism) is called irritability; and it lies quite apart from consciousness, and is entirely different from feeling. A muscle cut from a freshly-killed animal has irritability. So when the cerebral hemispheres are removed from a frog, all its nerves possess their irritability, and reflex actions go on as well as if it were a complete creature; but all this time it has no feeling, for it has no organ of consciousness. If, instead of removing these hemispheres, we suspend their action by narcotics, the effect for the time being is as if they were not there. There may be the highest irritability of the nerves, but still no feeling in the creature. All that the irritability proves is that the nerves are sensitive; but feeling is quite independent of this. We have every reason to believe that the brain is always the organ of consciousness, this being taken from human experience, assisted by trustworthy analogy. We have evidence of men and women, who can be questioned and can tell us what they have felt and not felt. We cannot feel without our brains, and we find that wherever the functions of the brains of other animals can be tested, they are like ours in kind, though differing in degree; and that when it is absent, or inactive, there can be no consciousness, and consequently no feeling. As the existence of feeling depends upon the activity of the brain, so it also increases with the more perfect development of that organ, and we naturally expect to find that animals can both enjoy and suffer more as they stand higher on the ladder of being, and than man—the highest of animals—is also chief in sensibility. In the human race we find a certain rough proportion between sensibility and intellectual development, which leads us to believe in a similar proportion existing in the ranks below us. Savages will undergo with equanimity tortures which no civilised man (except, perhaps, under great excitement) could endure; and it is impossible to believe that the prolonged pain of tatooing could be borne for the sake of ornament by anyone who felt it as we should do. It is clear that sensibility must vary, as the supply of nervous force varies, because the same properties which cause us to think a thought enable us also to feel a sensation. If the nervous system is not

easily excitable, a painful stimulus will travel through it slowly, and even while producing its appropriate reflex action, will have little power left to affect the brain, and will produce a feeble effect when it arrives there; whereas sensitive nerves will convey impressions rapidly to a sensitive brain, and the result is a quick and vivid sensation of pain. From this we judge that animals are not as sensitive as man. Their reactions may be as prompt as those of men, because a larger proportion of their nervous energy works through the spinal cord and inferior brain centres, and less is expended on thought. Again, in all that adult human beings suffer there is a mental factor which is almost absent in animals. (It cannot be better described than in the words of Mr. Edmund Gurney, in the *Fortnightly Review*, December, 1881: "The sense of rebellion; the helpless beating about of the intellect; the counting of time and vivid sense that each moment will be like the last; the demand, ever urgent and ever baffled, to find a meaning for such experience; more than all, the sense of wrong that comes from comparison, the consciousness of self as an exception, of clueless isolation, of being marked off from normal sentient life by an intolerable something which none can share—all this points to the close relation of suffering to intelligence). Our most intelligent creature—the dog—has, of course, a memory, and is capable of recalling places and things which have been associated with suffering and disliking them; but, with an average dog, such memory is faint as compared with what we should exert under the circumstances. Among human creatures we see the effect of mental development upon the sense of pain very clearly in the case of children. An infant can be vaccinated without making it cry, if its mind is kept occupied by a bit of sugar, or other attraction held before it; and it will undergo even much more pain, without discomposure, if well amused. But when that child is three or four years older he will understand that something is going to be done to him; he will be terrified at the preparations; neither sugar or anything else will divert his mind; and he will be conscious of all the pain given, and probably exaggerate it from terror. If pain can thus be a secondary thought in the minds of infants, it can be still more so in that of animals. The following anecdote is furnished by a gentlemen, whose house dog met with an accident, by which a large piece of skin was cut from above the eye, so he, being a surgeon, determined to stitch it. So the dog was taken outside and dressed. While this was being

done he was straining and struggling to get away, though never whining nor crying. When released he darted into a shed and seized a bone which he had had his eye upon, and which he had been struggling to reach while undergoing his operation. Other anecdotes about horses and dogs may be furnished. Such cases as these, I think, leave it no longer to conjecture whether animals feel as keenly as we do. We saw by the preceding case that there were reactions (commonly called signs of pain), but which proved more irritability than feeling. Such facts show us that it is not safe to judge of what is terrible to suffer, by what is terrible to witness. In some experiments, especially on the brain (and which appear to be the favourite experiments alluded to by the anti-vivisectionists), it seems to be supposed that it is the infliction of horrors, and ugly expressions have been quoted by people writing against this subject, such as "washing the brain away," "reducing a dog's brain to the condition of a lately-hoed potatoe field," etc. (Miss Cobbe quoting from a German writer), whereas the only pain being given is that to the feelings of tender-hearted people ignorant of physiology; but that appears to have been so intense as to render it necessary to stop the experiments, arrest English enquiry into the functions of the brain, and limit the gaining of experience in the treatment of its injuries to what can be acquired by Nature's experiments upon human subjects.

The next question which meets us is—What is sufficient justification for giving pain, and which, by laymen, is called cruelty, and is most difficult to make them regard at all? But I do not see how the public is a fit judge of this justification. In my opinion none but experts, or rather experimental physiologists, can form any opinion as to their value. Dr. Burdon-Sanderson lays down the rule that "The question of right or wrong depends upon the relation between the purpose of the experiments (or experimenter) and the pain inflicted"; that, "if the purpose is a good purpose, and if the experiment is made in the most skilful way, and no pain not necessary for the purpose be inflicted, the whole thing is a right action." Now, what is cruelty, as the laymen call this infliction of pain? The simplest, thorough definition seems to be—the wanton or excessive infliction of pain. The wanton infliction of pain is that for which there is no justification; the excessive is that for which there is justification in fact, but not in degree. A consideration suggests itself—that it is justifiable to inflict pain upon another for its own good. We act upon this principle constantly, with clear

consciences, and in the cases of those whom we love best. In the education of children, and the care of the sick, so also in the treatment of criminals, we do not hesitate to refuse what is pleasant, and enforce what is painful. But this is not sufficient guide. It is quite possible to do something which is really cruel, for the good of the sufferer. Let us suppose a case. Two children—a boy and a girl—are disfigured by teeth which have been allowed to grow crooked. The mischief has gone so far that it can only be remedied by long and painful treatment. There will be constant discomfort and distress, perhaps for months, and tooth drawing and other very painful minor operations from time to time. The teeth are sound, and there is no danger of worse consequences than the ugly appearance. It is certainly for the children's good that this should be amended, and that the parent takes them to a dentist. But the boy is very nervous and sensitive; he suffers great terror at the mere rattle of the instruments; he is reduced to fainting by the first experience of them, and loses his sleep from pain and general nervous misery. Would not any friend advise the parent—"Give it up; it is cruelty to torment a child for a matter of mere appearance; when he is grown up he can wear a moustache and partly hide the defect; and after all looks are of little consequence to a man?" Whereas, if the boy were sturdy and robust, his father would do well to encourage him to bear the pain for his future advantage. But with the girl, he would be much more unwilling to give up the attempt, and his lady friends would certainly urge him to persevere, reminding him that if her health suffered from pain and fright, she might be nursed into strength afterwards; but that there would never be another chance of saving her from disfigurement; and it would be a serious drawback to her through life. In these two cases the pain is inflicted for the good of the individual, but our judgment of whether its infliction is cruel or not, varies according to the proportion between the pain given, and the object aimed at. Hence we conclude that pain given for the good of the individual itself, may be unjustifiable, if the good to be obtained is not sufficient. We are thus constantly thrown back, for a test of the justifiable infliction of pain, upon a certain proportion existing between the evil of suffering caused and benefit of whatever kind sought to be obtained. If we are convinced that the advantages preponderate, we pursue our experiment or operation with a clear conscience, and it is not cruel. The widest and highest aim

of physiological experiment, whether painful or painless, is the advance of physiological knowledge. Every scrap of knowledge is turned to account sooner or later. The sounder and more accurate that knowledge is, the more trustworthy are the conclusions drawn from it. The more doctors learn of the nature and working of the machine they have to repair, the less likely they are to make mistakes in dealing with it, and be it remembered that a medical mistake may mean a lost life.

(*To be continued.*)

SCIENTIFIC BREEDING.*

BY J. R. KELSO, D.V.S., BARABOO, WIS.

It is not my intention to present any special method or system to follow in breeding or selection, applicable to all breeds, or suitable to all breeders; neither to eulogise or criticise any particular breed or breeder, fully believing that a more scientific system of breeding can be adopted by the breeders of each individual breed, by a more thorough and scientific selection of sire and dam.

The primitive horse was a diminutive animal, not much larger than an ass, standing about thirteen hands high, the largest specimen not exceeding fourteen hands. The head was disproportionate in size. Pictures of these horses have been preserved to us in a very curious way. There were artists among the cavemen of those days. Their pictures of the horse and other animals, made on antlers and horns, are drawn "with a spirit, a rigor and a fire that would do credit to an artist of to-day." In the Swiss lake dwellings of the stone and early bronze ages, we find not only the bones, but horses' bits made of stags' horns and bronze. These bits are only three and one-half inches wide, hardly suitable for a child's pony of to-day. A cob thirteen and one-quarter hands high requires a bit four and one-quarter inches in width, and a Shetland pony of eleven and three-quarters hands requires a bit of three and three-quarter inches in width, and shoes three inches wide. Modern bits for horses vary in width, from four and one-half to seven inches. In the early and late bronze and iron ages the horse was used for food and was tamed. Then Homer wrote of him being harnessed and used on chariots for war or races, and occasionally for riding, though he was then too small for any very special exercise of that kind. Domestication had not yet commenced to increase

* Read before the Wisconsin Society of Veterinary Graduates, Madison, Feb. 5th, 1896.

the size of the animal. After losing all reminiscence of its former freedom, and with the care of man, a sudden improvement was effected in size and adaptability. From such period it has been improved into innumerable races and breeds.

Instances of Increase in Size from Scientific Breeding.—Mr. Anthony Hammond, in a recent issue of *Bailey's Magazine*, states that during the last 150 years the thoroughbred has increased three inches in height. In the racing volume of the Badminton library, it is stated that Poland has produced several thoroughbreds sixteen hands in height. Mr. Hammond also states that, whereas, fourteen hands was formerly the recognised standard for hackneys, previous to 1885 it was increased to fifteen hands, and at the latter date the R. A. Society was induced to allow entries in the hackney class of that height and over.

Again, a Mr. T. Dykes says, "the primitive Clydesdale was the Galloway, the ancient Scottish native horse two inches or so less in height." Again, Lawrence, in 1809, gives the height of the Galloway as from thirteen to fourteen hands. Professor Wallace, of Edinburgh University, 1889, gives the height of the Clydesdale of the present day at from sixteen to sixteen hands two inches.

Reproduction and Conception is the function by which the species is preserved, and is accomplished by the organs of the generation, the union of two fundamental elements, ovum and spermatozoon. The development and growth of animated creatures dates from the instant, when, by the act of impregnation, the egg receives a specific stimulus from a spermatozoon. The impulse thereby communicated manifests itself by cell division and proliferation. Nature proceeds in the development of male and female germs in parallel steps. In the stages prior to union, there is nothing to determine the influence of sex. In character, the sexual contributions are equal, therefore there can be no sexual determinative function for either to exert. Hence, the conceiving elements or cells being equal, conception is the joining of two equals into intimate unity. From the joining of these two equals proceeds multiplication of cells differentiated into embryonic organs, and all this occurs during the nutrient, retentive, and protective pregnancy of the mother. Thus science seems to teach some beautiful lessons in monogamy and the equality of sexes. We find, therefore, that the new individual must contain not only hereditary matter, but that in male and female portions.

Breeding.—Whatever the animal, its form, organisation and general make-up, will be an indication of its true type and character. It is a fixed law of nature that this should be so. To illustrate: the thoroughbred horse is courageous, high-strung, active, sinewy, impatient under restraint, and not given to carry much flesh or fat. The heavy draft horse carries much flesh, is docile, honest in the harness, possessing great bone and sinew, and is, on the whole, more sluggish.

Results of Improper Breeding —In breeding lies the foundation for disease, bad conformation, transmission of undesirable characteristics, lowered vitality, impoverished nerve power, resulting in a more or less weakened condition of the two great life-giving principles—germ and sperm cells. Great evils result not only from the mingling of the blood of members of the same family, but that of separate and distinct races. In breeding, an opportunity is never lost of securing, early and late, from the willing or unwilling, fit or unfit dam, a colt, calf, lamb, litter or brood. Further, the preservation of all these is aided by all the means of science and art that can be brought into play. What is the result? The weak is preserved at the expense of the strong; "off form" and sub-standard are favoured. Hence we have, as compared with nature's process, the survival not only of the unfit, which would otherwise have been killed off, but the development of all possible deteriorating characters, with some possible grains of wheat amidst much chaff. They are all devoted to the breeding-pen, with a handing on, to generations yet unborn, of all the worst accumulating predispositions of the germ-plasm. In the literature of the Bible we read of the prophet Ezra condemning the Jews in these words, "When I heard this thing, the mixing of the holy race with other races, I rent my garments and my mantle, and plucked off the hair of my head and my beard, and sat down astonished."

This is an age of connivance, supplementing bodily defects and deformities by many and various kinds of artificial appliances. Go to any race track, and there we find examples of what occurred on the Galesville track in 1894, where, out of twenty-seven starters, no less than twenty-six wore hopples. Look at all this work required to cover deficiences. The perfect trotter must have a trotting spirit in a trotting body. We have fallen largely into the habit of looking for speed more to the reputation of a trotting stallion or family than to their way of going. Fast horses of every conceivable variety in shape and conformation are made, for a time, steady

trotters by the use of all sorts of weights, boots, pads, hopples and other appliances. In the application of all these artificial means to make up deficiencies of bodily form, we have largely overlooked the all-important facts of so selecting and breeding, that nature shall supply a conformation that obviates resort to such appliances. I also claim, without fear of successful contradiction, that three times a week, or every other day, is as often as any horse should be used in service. Oftener than this, and the seminal fluid of the sire is immature, and if a colt is produced at all, he will be almost sure to be big-boned, loose-jointed, loosely-muscled, with feeble constitution. Were proper attention paid to this matter, failure to impregnate would occur much less frequently than it now does. Further, in my opinion, better results may be acquired by breeding the dam as near the end of heat as possible, thereby allowing the ovum full time for maturity.

Heredity, as generally understood, implies the contribution of two sex elements, male and female. These are considered to offer certain constituents, however different they may be supposed to be, bearing certain hereditary influence, and that in two lines of descent—male and female, contributing their hereditary proportions, not only of the present type, but of type far distant. When the dam and sire both possess a due amount of vigour, the foal will combine in itself the most marked characteristics of both, while any quality peculiar to either is apt to be prominent in the offspring. Peculiarities of habit and temper force themselves upon the notice of every person familiar with domestic animals, and by close observation we notice that the slightest peculiarities are transmissible. Few people will gainsay the fact that brain power is hereditary, as we have ample proof in human beings, and as is also well demonstrated in homing and tumbler pigeons, the young birds nearly always inheriting the homing and tumbling propensities of their parents.

The results of training must not be confused with heredity. Heredity, the nascent power of training, has always been present, more or less, in the animal. Training in such lines as faculties may exist, develop it, intensify it; the more of each, the more may be expected as the combined result. Therefore, who would attempt to train a Clyde except for draft, a hunter except for clearing obstacles, or a trotter except for trotting. These laws govern heredity in the brute creation, as persistently as they do in the human family, and the introduction of good, or the eradication of bad qualities will be found amenable to the breeder's science through the

potent agency *selection.* This forms the stepping-stone to scientific breeding, and until man has learned to take advantage of the hereditary tendencies toward good qualities, and work away from those that bring bad forms, bad temper, sterility, tendency to short life, and unpromising progeny, he is not worthy of being called a breeder of improved domestic animals.

Selection.—A sire or dam should be rejected for any one really bad fault. The greatest strength of either is limited by his or her worst point. They are often selected because they possess one or more very good points. This is a wrong principle in selecting. The selection of sire and dam should begin by rejection for bad points. Brood-mares should be selected with as much critical scrutiny as stock horses. Individual excellence is the criterion always in view, and embraces size,form, blood, colour, performance, ample and facile breathing apparatus.

I firmly believe in a balanced structure for the greatest physical capacity. Moreover, I contend that the undue development of one portion of the organism is plainly at the expense of its co-ordinate part.

Applying these conclusions to the horse, I contend that when the horse is balanced, that is, when he measures as high at the "coupling" as he does at the withers, and as long from the shoulder points to the posterior projection of the hip as he is high from the ground to the withers and the coupling, and has perfectly proportioned limbs, and other essentials, such as blood elements and development, he can perform his duties, be they that of the draft or the race horse, with greater effect than if the mechanism is out of balance. Therefore, to breed the natural born, actual trotter with the most certainty and the best results, combine the true and tried genuine producers of such. This principle holds good in all breeding.

In the future, when a more accurate science is applied to breeding the trotting horses than merely the intensification of his trotting blood, and physiological perfection receives its adequate attention, defective construction of shoulder and hip, of elbow and stifle, will be so far remedied by judicious breeding of perfect specimens, that there will be neither splay-footed, nor pigeon-toed performers on the trotting turf. Physiologically, much more than in trotting potency, the perfect American trotter is in the distant future as a type.

Cases.

CIRRHOSIS OF LIVER.

BY ROBT. CARTWRIGHT, ESQ., WOLVERHAMPTON.

A BAY HORSE, the property of the Wolverhampton Tramway Company, had, along with several horses in the same stable, an attack of influenza. They suffered from a high degree of fever, the mucous membranes being very much injected and yellowish. There was pharyngitis and laryngitis, complete loss of appetite, accompanied by great muscular weakness.

All the cases recovered speedily, with the exception of the one in question. This horse seemed to recover slowly, feeding very indifferently, the coat and skin having an unthrifty look. Not much change took place in his condition for two months. About this time the horse commenced to lose flesh rapidly, the pulse became dicrotic, there was palpitation of the heart. The conjunctiva and other mucous membranes, were much injected, and of a deep orange colour.

There were evidences of cerebral disturbance (probably from bile salts circulating), the animal walked round the box in a dazed condition, and gradually getting weaker, died on Feb. 21st. The *post-mortem* showed all the organs healthy, except the liver, which was very much enlarged, and presented the same appearance throughout as the piece that I sent to you.

(The portion of liver was examined, and was seen to be paler than normal—a drab colour, in fact—while through the cut surface numerous lighter coloured bands were seen to run. Its consistence was firm, and it offered a good deal of resistance to the knife. Microscopic sections showed the hepatic substance to be invaded by a diffuse cirrhosis, accompanied by marked fatty infiltration.

The occurrence of brain symptoms should be noted; they very often attend grave lesions of the liver in horses.)

TUBERCULOSIS OF THE HORSE.

BY ROBT. CARTWRIGHT, ESQ., WOLVERHAMPTON.

ROAN PONY, six years old, in good condition, the property of a gentleman, was brought to my infirmary. The animal was said not to be feeding well.

On examination the submaxillary lymphatic glands were found to be filled, the nose was poked out and to all appearance there was considerable soreness of the throat.

There was marked depression and dulness and the pony moved very stiffly. The symptoms shown were very like those evinced by an animal breeding an attack of strangles, and the animal was accordingly treated for that disease.

The throat was blistered and the swelling in the submaxillary space disappeared with the exception of a small hard nodule which remained in the gland.

The animal continued to lose flesh rapidly, fed indifferently, became hide-bound, tucked up; there was tenderness on percussion over the ribs. On the pony being exercised it made a noise resembling that produced by a whistler.

The general appearance of the patient at this time, was that of an animal suffering from bastard strangles, and recurring attacks of colicky pains suggested the probability that some of the abdominal lymphatic glands were the seat of secondary abscesses.

As the case was a hopeless one I had the mare destroyed after about six months' observation and treatment.

Post-mortem examination revealed the liver and spleen to be the seat of very numerous hard whitish dry deposits, which Professor Williams states to be tubercular. The other organs were quite healthy.

DIPHTHERITIC CONDITION OF THE URINARY BLADDER.

BY H. SNARRY, ESQ., M.R.C.V.S., YORK.

GUERNSEY COW, calved over a week before the time, cleaned all right: went down next day with signs of milk fever.

A calving drink had been given both before and after parturition, and the cow was purging freely. When she went down half a pint of whiskey was given and I was sent for. I found the cow in a dazed condition, and she soon went on to the comatose state, and remained so for over twenty-four hours. She then began to show signs of consciousness, raised her head, and took sloppy mash, and gave one the impression that she would go on all right. Unfortunately, however, she had a relapse, the appetite was again in abeyance, she groaned, was very restless, and showed other signs of being in pain. These painful symptoms were not constant, they came on at intervals. The fæces were one day yellowish, and next day very dark. I "raked" her and she afterwards strained violently as if to pass something. I passed the catheter and the urine was normal in appearance

one day and a day or two after it was very high-coloured—blackish, in fact. The principal thing noticed towards the end of her life was that immediately after she drank water or was drenched with medicine or gruel she commenced to be distressed, breathed very quickly, and seemed to be suffering a great deal of pain. She also strained now and then. I treated her with hydrate of chloral and opiates for the most part.

On *post-mortem* examination, with the exception that the leaves of the third stomach were somewhat inflamed, the abdominal organs appeared quite healthy.

The bladder, however, presented a very peculiar appearance. It contained about a quart of black fluid, its walls were greatly thickened, and were covered by nodular masses ; on scraping these a blood-stained membrane was detached, showing ragged-looking ulcerous patches below.

RUPTURE OF THE STOMACH AND VOMITION IN A HORSE.

BY H. SNARRY, M.R.C.V.S., YORK.

CHESTNUT draught gelding, eight years old, slightly touched in the wind, the property of a firm of millers. They have had him a year and a-half, and never ailed anything until last Friday. He had averaged journeys of sixteen to twenty-six miles every day. Last week in double shafts. On Friday he had only one companion, taking three tons of goods on a 16 cwt. trully a distance of thirteen miles out. He did not sweat on this day, but on the previous day he was noticed to be sweating freely. He ate and drank alright during the day, and on his return to within two miles of home appeared quite well ; there, however, he made attempts to stop and to lie down, as if griped. He was kept going until he got home ; and, after the harness was removed, he speedily went down, moaned, and even screamed with pain, and sweated profusely. He did not try to get on his back, but often rolled half over. He got very cold, though still sweating, and trembled. It would be about 8 p.m. when the horse showed signs of pain on the road, and about 9.30 when I saw him. The first thing that I noticed was a thick string of saliva hanging from his mouth, and a discharge of frothy material from the nostrils. He was lying stretched out and moaning ; the abdomen was tympanitic. When I put him up he trembled, and commenced to draw in his neck and retch, and with the effort a dirty fluid came down the nostrils and out of the mouth.

At times the head was held right up in the air, as if there was spasm of the stomach. He had passed fæces and urine during the day, but only some small droppings of the former since his return. A colic draught had been given, and the chest and body had been rubbed with turpentine. I gave him--

Bismuth subnit., ½ oz.,
Acid acetic, 1 dram,
Chloral hydrate, ½ oz.,

as a draught. After this he seemed easier, and the retching stopped.

Soon the pain returned; he lay down, and stretched himself out at times.

I left two anodyne draughts, to be given if necessary. He was left about 4 a.m., standing up and quiet, and continued in this improved condition until 9 o'clock, when he again commenced to show pain; there were cold sweats, tremblings, followed by vomiting.

I was called again, and I never, except on one occasion, saw an animal display such violent retching, or beheld such quantities of food from out of the nostrils and mouth. He stood with his head pressed in a corner, then turned round, plunged forward at the door, went down, and was up in a moment and quickly down again. Finally he made a desperate plunge, almost a somersault, and died.

Post-mortem.—I found a rupture of the pyloric part of the stomach, three inches in size, some inflammation, but by no means intense, of the small intestines; the large intestines contained very little fæces. I saw nothing that would account for the rupture. The food has always been bruised oats, bran and split beans. I may mention that the case of vomition, which was more violent than the one recorded above, was due to a large cluster of bots which had become detached from the cuticular portion of the stomach, and had got impacted in the pyloric orifice.

FRACTURE OF PREMAXILLA.

BY J. M. STEWART, ESQ., M.R.C.V.S., STIRLING.

THE following case can hardly fail to have interest for your readers on account of the extraordinary conditions that gave rise to the accident.

On January 30th last, I received a telegram to go to Mr. Monteith's Wright's park, Kippin, to see injured horse. On my arrival I found a bay carriage horse, six years old, and

was informed that he had injured his mouth with the rack chain with which he had been playing, and while having the chain in his mouth one of his teeth had got fast in a link, and he only got it free after much struggling.

On examining the mouth, I found that the left half of the body of the premaxilla, carrying the three incisor teeth, was protruded fully an inch below the level of its fellow of the other side.

The piece was freely moveable and on careful manipulation I soon discovered that I had to do with a fracture right through the symphysis and also through the left external process of the premaxilla, the fracture running obliquely from above downwards and forwards to the interdental space between the corner incisor and the tusk. The piece was so freely moveable that I am inclined to think that the fracture extended between the symphysis of the internal processes of the bone as well. After a good deal of manipulation I managed to get the bone pushed back into position and then I included all the incisors in a piece of stout copper wire, twisting it firmly with a pair of pliers; the ends were further twisted round the left tusk; the animal was kept on soft diet only for a week. After that, hay was allowed and in four or five weeks recovery appeared to be perfect and the horse was put to his usual work.

This case is useful in one way; it shows the firmness with which the incisors are implanted in the gums and points to the futility of attempting their removal.

I may state that there is no doubt as to how the accident happened: the chain was seen with the corner incisor fast in the link.

EXPERIMENTS WITH BARIUM CHLORIDE.

BY J. J. MCCARREY, MAGILL UNIVERSITY.

THE following cases show the results of some experiments recently made by the '96 Journal Club with barium chloride as a therapeutic agent in the treatment of colic. This drug was brought to the notice of the profession by Dieckerhoff, who highly recommends it on account of its prompt and efficient action in producing peristalsis and its low cost as compared with pilocarpin and eserin.

Case I.—Bay gelding, aged, weight about twelve hundred pounds, subject for experiment. Received an intravenous injection of one gram of barium chloride in solution. In four minutes the peristaltic murmur was much increased, followed

by the evacuation of fæces. In nine minutes another evacuation occurred and again in twenty minutes. The pulse and temperature remained unchanged.

Case II.—Bay mare, weight about one thousand pounds, suffering from spasmodic colic. Was given an intravenous injection of one gram of barium chloride in eight c.c. of water. In three minutes there was considerable straining and increased uneasiness. In five minutes the animal defæcated, the fæces being hard. In thirty minutes fæces were again expelled and at intervals of a few minutes for an hour, each evacuation being softer than the preceding. Straining was marked between evacuations, indicating violent peristalsis. In this case there was a slight increase in pulse, respiration and temperature. In three hours the animal showed no symptoms of colic and the effect of the drug had apparently ceased.

Case III.—Bay mare, aged. Received a subcutaneous injection of 1.2 grams of barium chloride in 10 c.c. of water. One minute after injection the animal appeared uneasy. In fifteen minutes after she commenced to strain, but no evacuation occurred till half an hour after receiving the injection. After this, at intervals of a few minutes, evacuations occurred, continuing for about an hour and a half. No change in temperature or respirations, but the pulse was slightly accelerated.

Case IV.—Brown gelding, aged, suffering from spasmodic colic. Received intravenously one gram of barium chloride dissolved in about 10 c.c. of water. Fæces and flatus passed in nine minutes although straining was noticed about one minute after injection. Evacuations took place at intervals of a few minutes, continuing for half an hour, although there was an abatement of colicky symptoms immediately after the first evacuation.

Case V.—Bay gelding five years old, showing similar symptoms to preceding case. Received one gram barium chloride dissolved in 10 c.c, water, intravenously, in the jugular vein. Fæces were not passed till twenty minutes had elapsed, but after that at intervals of five to fifteen minutes. Did not recover from colic for three hours, although the violence of the symptoms were much lessened after the first evacuation.

Case VI.—The subject in this case was a thoroughbred mare, five years old, and in about the fifth month of pregnancy. The animal was taken with colic at 9 a.m. Anodynes were given with warm water injections. This treatment was continued through the day without any improvement. At

8 p.m., as a *dernier ressort*, it was decided to use barium chloride, the use of which had been delayed on account of the state of pregnancy. At 8.15 p.m. an intravenous injection of 15 grains in 5 c.c. water was given.

At 8.19 the first symptoms of the action of the drug were noticed. The animal lay down and strained violently. Five minutes after flatus and a small quantity of almost liquid fæces were passed. Straining continued at intervals for half an hour without the passage of fæces and the colicky symptoms were apparently aggravated. At 9 p.m, rectal injections of warm water were given and an exploration revealed the fact that the colon was filled with fæces which were passed a few minutes later.

The animal made a complete recovery.

BLOWING OF CALVES.

BY E. SAINTHILL PEARSE.

THE blowing of calves, for the purpose of making the veal have that puffy and inflated appearance so commonly seen and appreciated, is produced by a most disgusting and insanitary process. It is done in this way: the butchers put a blow-pipe through the skin, and one man blows into it with his mouth, and another man beats the hide with a gambrel, so as to diffuse the air over the carcase of the animal. Now, where the disgusting part comes in is that the breath of the man is diffused through the whole of the cellular tissue of the animal. The man so blowing may be a smoker or a drinker, with foul breath, perhaps half drunk whilst doing it, or he may be suffering, or has suffered, from some infectious disease that anti-vaccinators would howl at the chance of being conveyed into the systems of their children through vaccination, but see no objection to their taking a food that is liable to be infected in a greater degree. I will give you a case in point. A butcher in ——, who was considered to be the best dresser of veal in the district, had his breath so frightfully foul that when his fellow-tradesmen went to —— Market on Wednesday mornings, they waited on the platform to see into which compartment he went, they then entering another, as they could not stand the stench of his breath. Now, I do not object to the blowing of veal providing it is done in a mechanical way, which it can be by using a pump, such as is employed in inflating pneumatic tyres.

CLINICAL CASES

IN THE PRACTICE OF H. THOMPSON, M.R.C.V.S., ASPATRIA.

No. 1.

Parturition—Maternal Dystokia—Torsion of the Uterus.

EARLY on Sunday morning, March 29th, we were requested to attend a cow that was said to be "set at calving." On arrival we found a black polled cow (which had been bought at an auction mart on the day previous), exhibiting all the signs of parturition, but accompanied by no presentation of membranes or fœtus. Manual examination revealed the fringe of the os fairly open, but obstruction of the passage at a point further on.

As the labour pains were not very strong, a little extract of belladonna was applied to the os, and as far forward as could be reached, and we left, promising to return in an hour or two.

At 11 a.m. we again saw her, and found things much as formerly, except that the animal looked decidedly duller and breathed more heavily, its body being here and there covered with a dewy sweat.

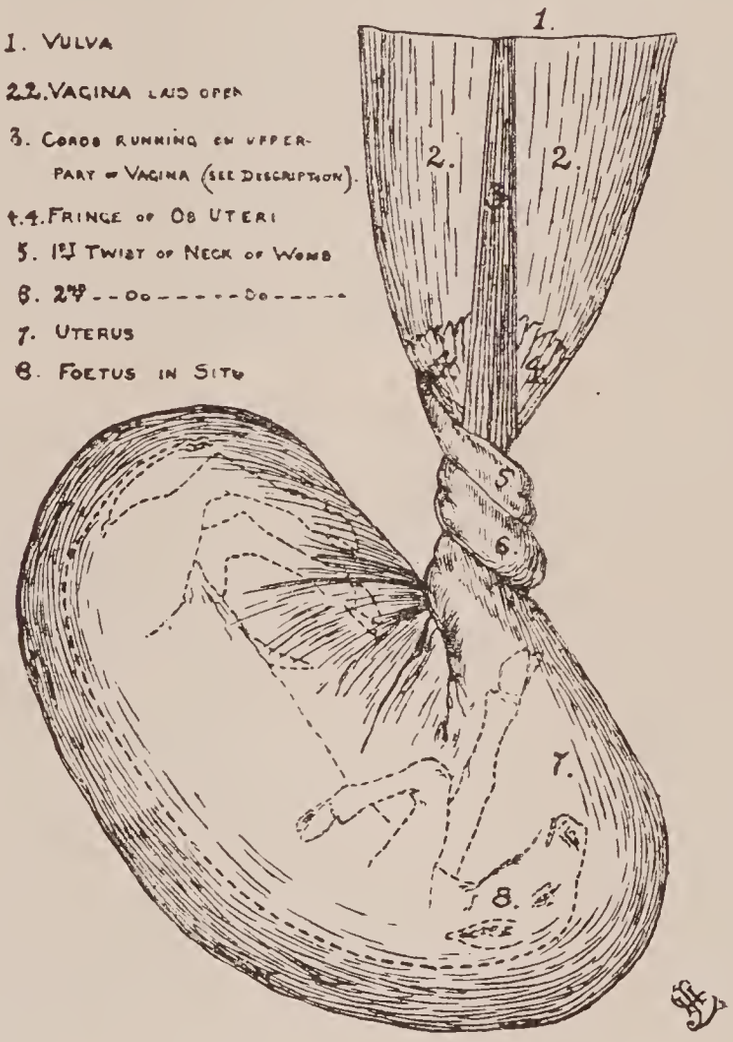
On introducing the hand, two strong cords resembling ligaments were found to run along the roof of the passage from the vulva to the os, ultimately becoming lost in the obstruction, into which the fingers could not be inserted. By examination, per rectum, a hard body, like the turn in a twisted walking-stick, could be distinctly felt at the neck of the womb. There was now no doubt that the impediment to parturition was twist of the cervix, and that of more than ordinary character. Rolling the cow from left to right produced no change in the parts, or the same operation in the reverse way; so that, after giving whisky 1 pint, we were reluctantly compelled to again leave her alone, and wait patiently.

We saw her again in the evening, when she looked brighter, though there was no alteration in the condition of the uterus. Gave Ol. Ricini, 12 ozs., and decided to leave her over night. Next morning she was still the same and remained so all day.

On Tuesday she was slaughtered and the *post-mortem* showed a double twist of the neck of the womb running from right to left as shown in the accompanying diagram.

Mr. Thompson has met with several cases of partial twist, both in the mare and cow, which have been successfully reduced by "jamming," or casting and rolling, but this is only the second case of double twist he has come across. Both of

these had to be slaughtered, on account of not being able to get the hand through the twist in the neck so as to bring a portion of the fœtus forward to assist in undoing the obstruction. Mr. Thompson notes that four of the cases of twisted uterus occurred in black polled cows.



DOUBLE TWIST AT NECK OF THE WOMB IN A CALVING COW.

No. II.

Parturition—Fœtal Dystokia—Monstrosity—Ectopia Abdominalis.

The above occurred on Monday, March 23rd, when a roan short-horn cow (2nd calf) was unable to expel the fœtus.

The head and two feet, were presented, but on account of one of the legs being malformed, especially at the knee, it was necessary to make a careful examination to determine that both legs were fellows. Whilst doing so two feet were found on the floor of the pelvis, well forward to the chest of the calf on each side.

Diagnosis.—Monstrosity, but not yet aware of the ectopia.

The head and fore feet were roped, and endeavours made to push back the hind feet while traction was applied to the head and fore limbs, but these attempts were of no use, so embryotomy was determined on. The fore legs and shoulders were removed, and attempts made to repel the hinder limbs while pulling at the head, but again no advantage was gained.

With the long embryotomy knife the true ribs were cut through and the heart and lungs extracted, but no abdominal viscera could be found, as the fœtus was bent on itself, so leaving no doubt as to the ectopia.

A MONSTROUS CALF

The head and neck were then skinned and cut off, and the skin carefully tied over the cut ends of the bones so as to prevent laceration of the uterus.

Cords were now fixed to the hind pasterns, and strong but steady alternate traction applied, while the body was pushed back into the womb, where it, so to speak, turned a somersault, and by more steady pulling the calf was extracted and found to be of the nature above named. Its spine was curved downwards from right to left; there were no abdominal walls; the hind legs were tucked up towards the chest with the viscera floating free in the uterus, as shown in the sketch. The operation took fifty-five minutes, and the cow ultimately did well. It should be mentioned that during the operation the passage was kept constantly lubricated with hog's lard, and that after all was over it was well dressed with carbolized oil.*

* The above cases recorded by Mr. James Spencer Smith, M.R.C.V.S., assistant to Mr. H. Thompson, Aspatria.

INFLUENCE OF RAINFALL ON BURSATTEE.

BY JOSHUA A. NUNN, F.R.C.V.S., PRINCIPAL, LAHORE VETERINARY COLLEGE.

A DAMP climate has by some authors been looked upon as an important factor in the prevalence of bursattee ulcer in the horse, and I am therefore induced to send the following facts, as they may be of interest to your readers. The summer of 1895 was an abnormally dry one all over India, but especially so in the Punjab and the north.

MONTHLY AVERAGE RAINFALL AT LAHORE DURING SUMMERS OF 1894 AND 1895.

Months.	Normal average rainfall.	Actual rainfall, 1894.	Actual rainfall, 1895.	——
April	0·46	0.40	1·28	
May	1·03	0·04	—	
June	1·84	7·54	1·49	
July	6·67	3·54	1·16	
August ..	5·83	3·60	4·64	
September ..	2·49	2·10	—	
Total for six months	18·32	17·22	8·57	

The total rainfall for the six months of 1895 is half that of 1894. The number of cases of bursattee admitted during the six summer months of 1894 was sixteen, and for the corresponding period of 1895 eight.

Lahore, March 18th, 1896.

HYPERTROPHY OF THE PROSTATE GLAND.

BY JOSHUA A. NUNN, F.R.C.V.S., PRINCIPAL, LAHORE VETERINARY COLLEGE.

IN the August number of THE VETERINARY JOURNAL for 1895, page 131, I reported a case of hypertrophy of the prostate gland in an aged gelding, that presumably had occurred some considerable time after castration. Another case of the same nature has come under my notice. The patient, an aged Australian gelding, had been cast and sold out of the Royal Artillery. There was no previous history to be

obtained, but his present owner, in whose possession the horse had not long been, said he had been cast for old age and not for any medical reasons. He consulted me on account of the difficulty the horse had in urinating, which kept dribbling away from him for a considerable period, alternating with a regular gush of fluid. A calculus was suspected, but on attempting catheterization, the instrument was stopped in the prostatic urethra, and no reasonable amount of force could get it further. Rectal examination showed hypertrophy of the middle lobe of the gland, which was greatly enlarged. Although carefully searched for, no trace of a calculus could be discovered in the bladder, which was empty. The owner was leaving Lahore that day, and was unwilling to carry out any further treatment, and as he took the horse with him, the case has been lost sight of.

TWO CASES OF PARALYSIS IN DOGS.

BY JOHN H. WRIGHT, M.R.C.V.S. (J. & A. LAWSON'S, MANCHESTER).

ON the 27th of January of this year, I was called out to see a collie dog supposed to be thirteen years of age. On arrival found him to be suffering from pneumonia, for which he was treated, and made a good recovery. To my great surprise, I was again called out to see the same dog, finding him completely paralysed in the hind quarters. I gave him hot baths for three days, rubbing on back (from which I clipped away the hair) some stimulating liniment, and ordered hand rubbing of the extremities. Afterwards I used hot water bandages, giving internally Nux Vomica and Sp. Æth. Nit., removed fæces, and gave a few injections. The dog gradually but slowly improved, and the owner hearing that there was but faint hope of recovery from paralysis, consulted me with regard to destroying him, but was persuaded at last to let him have a fortnight's reprieve, with the result that the dog is now quite well. For a week during his first illness, and also during the first week of paralytic attack, he had lost all appetite, and had nothing but bovril, milk and eggs administered in spoonfuls.

The second case was on February 24th, being a lady's pet fox-terrier bitch, brought to the Infirmary completely paralysed behind; the history being that on the previous Saturday it was quite well, and out for a walk with the family. On Sunday morning was found in the above state, and they had heard her in the night fall downstairs. On examination and giving her an injection, I found her bowels to be very constipated; gave a purgative draught

and a warm bath; the latter I continued every morning for a week, with weak stimulating liniment applied to the back, following up with hot water bandages for a fortnight. I administered Nux Vomica, m. xv., twice a day, and increased it weekly until it reached m. xxx., together with Sp. Æth Nit., and doses now and again of Syr. Rhamni, her food being bovril and milk. She gradually improved, and the week before she left I gave her shocks once a day with the galvanic battery. She went away quite recovered.

Both animals being old and the recovery doubtful, I hope the above two cases may be of some interest to the numerous readers of the VETERINARY JOURNAL.

Editorial.

"LET GLASGOW FLOURISH."

So runs the motto that has been adopted as its pass-word by one of the greatest cities in the world. It claims to be the second city in the British Empire in point of population, and boasts of its material wealth. These are points rather to be discussed by the statistician and the economist than by the editor of a scientific journal; what concerns my readers more closely than details of population, area and rental, is the intelligence displayed by the municipality of the so-called Western Metropolis. Judged from the veterinary surgeon's point of view, this is very low indeed—so low that it is almost invisible or, perhaps one might say, beneath notice. Glasgow is one of the two Scottish towns that possess veterinary and other colleges; it ought, therefore, to be one of the centres of light and leading. The Principal of the Glasgow Veterinary College, a man whom I am proud to call my friend, is one of the most experienced and most accomplished surgeons in the country, and thoroughly competent to advise any body of popularly-elected magistrates with regard to veterinary matters. He is assisted in his scientific and administrative work by an able and highly-trained son, who, in addition to other titles, can write M.D. after his name. Further, Principal McCall has a body of capable men attached to his college; and then, in addition to all this, there are in Glasgow a great number of veterinary surgeons whose services might be utilised by any corporation with great advantage to the community. Now, let my readers mark the wisdom which the Glasgow authorities display in the important matter of the choice of meat inspectors, the thankfulness they show to Providence for the easiness of their task, caused by the

wealth of talent at their command, the generous way in which they treat their distinguished fellow-citizens. Of course, my readers will expect to find Principal McCall at the head of the list of inspectors. Alas! no, he is not on the list of inspectors at all. There is not a single veterinary surgeon among them. The corporate wisdom of the city entrusts the welfare of the inhabitants, so far as meat inspection is concerned, to three butchers and nine policemen! I begin to wish that I had not been trained to the veterinary profession. If I or my parents had only had sufficient foresight I might have been a policeman, and then such chances of promotion as I should have had! When the late Lord Brougham, at that time Lord Chancellor of England, went to visit Cannes on one occasion, he was invited by the municipality of the little French town to a banquet, which was held in honour of the generous Englishman who had done so much to promote the prosperity of the place. In proposing his health the chief magistrate, after wishing the honoured guest all sorts of prosperity and good fortune, grew very fervid in his eloquence and said he hoped that Brougham, rising from glory to glory, might come one day to be even Lord Mayor of London! The worthy Frenchman could conceive of nothing higher. The next time I propose Mr. McCall's health I shall express the hope that he may some day rise to be a policeman and then, after a year or two spent in that capacity, retire full of wealth and glory. Really I fear that the police service is a profession neglected by our rising young men. Let Glasgow flourish and let us all thank her for her sapient advice to those about to become veterinary surgeons.

More remains to be told. I have before me at the present moment a copy of a memorial drawn up by the Corporation of Glasgow for presentation to Parliament, containing the following amendments to certain provisions of the Public Health Bill for Scotland, already before Parliament. From them I extract a paragraph which refers to our profession :—

It is further to be observed that section 24 of the Glasgow Police (Amendment) Act, 1890, comes into direct conflict with the provisions in clause 60 of the bill in regard to the examination of dairy cattle. In the bill the medical officer can only inspect the dairy if "authorised by an order of the sheriff, magistrate, or justice," and the cattle therein, if in addition he is "accompanied by a veterinary inspector, or some other properly qualified veterinary surgeon," whereas, in section 24 of the Glasgow Police (Amendment) Act, 1890, already mentioned, the medical officer or the sanitary inspector, or any person acting under their orders, may from time to time enter any byre or cow-shed, wherever situated, if the milk produced therein is being sent for sale within the city, for the purpose of examining any cow

kept therein for the supply of milk, in order to determine whether such cow suffers from any disease which might render the use of the milk dangerous or injurious to health. The facility with which this power can be applied in the detection of animals suffering from disease which, while it may be infectious, does not become epidemic (of which tuberculosis is an illustration) is readily appreciable, and any interference with it at the present moment—in view of the opinion expressed by the recent Royal Commission on Tuberculosis to the effect that "the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter"—would appear to be particularly inopportune. Moreover, the proposal in the bill to make the inspection of cattle by medical officers contingent on the presence of a veterinary surgeon seems to have no justification either in necessity or expediency. Medical men first pointed out the special diseased conditions in cows, which entail grave risk to the consumers of their milk, and it would be difficult, if not impossible, for the medical officers of many counties in Scotland to find a "properly qualified veterinary surgeon." The clause ought merely to enable local authorities to order inspection by a veterinary surgeon if they are so advised. It would further appear that the powers to prohibit the retention in byres of animals affected with tuberculosis, and the sale of milk from such animals, contained in Sections 26 and 27 of the Glasgow Police (Amendment) Act, 1890, would be rendered inoperative if the power in Section 24 of the same Act is interfered with, as it would be by Clause 60 of the bill.

This is a deliberate and intolerable insult to our profession, and is an attempt to deprive us of our just share in the administration of the Public Health Bill. It means that we are mere useless excrescences on the social body, and hindrances to the benevolent action of medical men; it unduly magnifies the importance of the one or two discoveries of the medicals, and totally ignores our many and valuable discoveries; it would lead the public to believe that the special study of disease in the lower animals is of less value than generalisations formed from the study of human diseases: this, of course, is illogical and absurd, but it is none the less pernicious, and it must not be allowed to pass unnoticed and unrebuked. There is a constant stream of active and energetic young men flowing into the veterinary profession, and these young men are yearly improving in intelligence and conscientiousness; there ought, therefore, to be—there is—no dearth of properly qualified veterinary surgeons in the country. It is equally true that the ranks of the medical men are full to overflowing, and that some of them are glad to make a living by attempting work for which they are but poorly equipped. We may pity such men, but we cannot allow them to interfere with our privileges or meddle with what they do not understand. We have suffered enough from the establishment of the Animals Department of the Board of Agriculture; let us checkmate this move on the part of the Corporation of Glasgow, and all similar attempts to betray and degrade us.

In last month's issue of THE VETERINARY JOURNAL, there appeared a brief summary of a lecture (the joint work of Messrs. Smith Greig, and Meek, of the Durham College of Science), which was a report on a series of experiments towards the determining of the cause of Louping Ill in sheep, and which has occupied their time and attention during the past twelve months.

It is not my desire or intention to aim at minimising the results of the labour my fellow-workers in the field of science have expended towards this end, but I have thought that a brief history of the work and time that has been devoted by me to discover and elucidate the cause of this fatal disease, may be of interest to my readers.

In the year 1867, in which year I was appointed Principal of the Dick Veterinary College, the prevalence of Louping Ill in certain of the sheep districts in Scotland, was brought to my notice, and from that time until now my scientific interest in the disease has never been laid aside; my investigations into this, and other diseases of the sheep, having been made under circumstances of the most favourable kind. Among others, the celebrated and greatest breeders of black-faced sheep in Scotland, the Messrs. Archibald, have afforded me, on their various sheep farms, every facility during the long period of years that has elapsed, to pursue my researches, initially entered upon, I may state, from motives of friendship, and a desire to lessen the loss in their valuable flocks, and in those of other breeders, which occurred annually from this disease and other diseases.*

I found, however, I had set myself no light task. Confusion worse confounded prevailed regarding Louping Ill. The diseases Braxy in its two forms, the cerebral effects of wool balls in the stomachs of lambs, sturdy, shorter-ill and stomach staggers, were looked upon as this disease in very many instances. Hundreds of *post-mortem* examinations were made by me, with the good result that I was enabled to differentiate those diseases from true Louping Ill, and to demonstrate it to be one of a specific nature, due to the presence of a micro-organism in the system of the affected sheep. In 1881, the Directors of the Highland Agricultural Society requested me, under their auspices, to continue my investigations, and to report their results to them for the benefit of the agricultural community of Scotland. The conclusions I arrived at regarding the cause of the disease, viz., Ixodes or "Tick," the preventive measures necessary for their

* I may state that Louping Ill is now unknown on Messrs. Archibald's farms.

extermination, the nature of the herbage that forms their habitat before they attack the sheep, and the changes they effect upon the cerebral and spinal nervous tissues, are fully recorded in the many editions of my work, "The Principles and Practice of Veterinary Medicine."

Messrs. Smith Greig, and Meek, have done me the honour, in the pages of the *Veterinarian*, of making a slight reference to my investigations connected with Louping Ill, and not in too flattering terms, but in no particular do they throw more light on the nature, origin, and symptoms of Louping Ill than are already known. It is but natural to expect that I, having devoted an average lifetime to its study, should view with very great interest the work that is being done by other investigators regarding it, and I beg to remind these gentlemen and other observers, that it is outside the laboratory walls accurate research must commence; and that a thorough practical knowledge of this disease, as exhibited during the life of the sheep, is absolutely necessary to gain that accuracy. I have above indicated the difficulties in this direction, and have no hesitation in attributing the varied pathological appearances described by different observers to the fact that cases of true Louping Ill have not always been submitted to them for *post-mortem* examination, as among the many diagnosed as Louping Ill cases by me, and examined within twenty-four hours after death, I seldom or never failed to discover cerebro-spinal effusion, exudate or gelatinous change in the nerve tissue, singly or combined.

Judging from some of the statements made by Messrs. Smith Greig, and Meek, in their report, I am inclined to think that, accomplished bacteriologists as they may claim to be, they are not the most correct observers of sheep while suffering from Louping-Ill. They state that "the fore limbs are often paralysed, and that the paralysis necessarily brings the animal to the ground, although it may be able to crawl about by the aid of the unaffected legs." It follows, if the fore-limbs are paralysed, that the sheep must move backwards to feed. In all my experience so grotesque a movement has not been seen by me. More likely the hind-limbs will participate when paralysis of the fore-legs exists. Again, it is remarked, "the eyes are often oblique." I presume that strabismus is meant, as in all sheep the eyes are set obliquely in their heads. I look forward with pleasure to further reports from these gentlemen on Louping-Ill, to compare, and I trust benefit in the investigations I am still carrying on with as much zest, as on the day I commenced them, twenty-nine years ago.

BEFORE we go to press this month, the issue of the voting papers for the election of those members of the profession obtaining the largest number of votes to fill the annual vacancies in the Council of the Royal College of Veterinary Surgeons, will be an accomplished fact. Mr. John Hutton, F.R.C.V.S., Kelso, is an aspirant to the honour, and the nominee of the Scottish Metropolitan Veterinary Medical Society.

Scotland is numerically but weakly represented on the Council, by reason of the unavoidable expenditure of time and money incurred in attending the meetings in London, and it is to be hoped that when a gentleman comes forward, able and willing to face these contingencies, the profession generally will extend their suffrages towards securing his election.

Mr. Hutton's record is a good one, he being, moreover, in every respect eminently qualified to assist in the business that comes before the Council. When the voting papers are being returned, I trust he will receive the amount of support necessary to obtain that honour.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

A QUARTERLY meeting of Council was held on Wednesday, April 22nd, at 10, Red Lion Square, James F. Simpson, Esq., in the chair. Present: Professors Dewar, Edgar, McFadyean, Penberthy, Pritchard, Shave, Thompson, and Williams; General Sir Frederick Fitz Wygram, Messrs. Abson, Barrett, Bower, Dollar, Faulkner, Fraser, Hartley, Hunting, Kidd, Lawson, Locke, Mason, Mulvey, Peel, Trigger, Wragg; Mr. Thatcher (Solicitor), and Mr. A. W. Hill (Secretary).

Correspondence.

The SECRETARY read a letter from Sir Matthew White Ridley, Bart., acknowledging the receipt of the Council's letter of condolence on the occasion of the death of Prince Henry of Battenberg, and informing the Council that it had been laid before Her Majesty, who was pleased to receive the resolution. The letter was ordered to be entered on the minutes.

The SECRETARY also read a letter from Mr. Pack, Hon. Secretary of the Southern Counties' Veterinary Association, with regard to the exemption of veterinary surgeons from serving on juries, and the revision of the scale of fees.

It was agreed that Mr. Pack's attention should be drawn to the Council's previous letter.

The PRESIDENT read a letter from the Worshipful Company of Farriers, thanking the Council for their aid in carrying out the provisions of the late registration scheme.

Finance Committee.

Mr. TRIGGER read the report, which was adopted; and on the motion of Mr. LOCKE, seconded by Mr. FRASER, it was resolved that the Finance Committee should be requested at an early date to enquire fully into the financial condition of the College, and report to the next meeting.

Registration Committee.

The SECRETARY read the report, and special reports were read by the SOLICITOR with reference to certain cases. On the motion of Mr. MULVEY, seconded by Mr. HARTLEY, it was agreed that the names of two members of the College should be struck off the register at the expiration of one calendar month.

The SOLICITOR produced an amended form of certificate proposed to be issued by the Victoria University, which was approved.

The Seal of the Council was ordered to be fixed to various prosecutions.

Examination Committee.

Mr. MULVEY read the report, which recommended, among other things, that an interval of three days should be allowed to elapse between the Written and Oral Examinations, so that the written papers might be delivered to the examiners in sufficient time to enable them to consider their awards; also that no alteration should be made in the choice of questions by the students, and the committee considered that biology should be treated as one subject. The Committee reported that a letter had been received from Captain Butler, tendering his resignation as an examiner, owing to his inability to attend the March Examination.

On the motion of Mr. MULVEY, seconded by Mr. LOCKE, the report was adopted.

Jubilee Memorial Committee.

At the suggestion of the President Mr. TRIGGER'S motion, which was further on in the agenda, was taken at this point, Mr. TRIGGER accordingly moved "That the Council be asked to amalgamate their Bursary fund now accumulating, and amounting to about £309, to the Jubilee Memorial Fund, for the purpose of increasing the value of the Jubilee Memorial Scholarship."

Mr. ABSON seconded the motion, but it was resolved that the report of the Jubilee Committee should be read before the motion was discussed.

The SECRETARY accordingly read the report, which stated that the amount that would be available to enable the Council to carry out the object for which the fund was formed would be about £504, and it was hoped that the Council would consent to the transfer of the Bursary account, amounting to about £362, to the Jubilee fund. The report also stated that the committee had passed for the consideration of the Council the following resolutions: "That the prize be a post-graduate one and awarded on open competition"; "That no Bursary be awarded until the sum of £80 is available for distribution"; and "That a small committee be appointed to consider and report the conditions of award."

Mr. TRIGGER moved, and Mr. ABSON seconded, the adoption of the report.

On the suggestion of Mr. DOLLAR, Mr. TRIGGER agreed to add to his motion the words, "about to be handed over to the Council, making the motion read as follows: "That the Council be asked to amalgamate their Bursary fund, now accumulating and amounting to about £309, to the Jubilee Memorial Fund about to be handed over to the Council, for the purpose of increasing the value of the Jubilee Memorial Scholarship."

Professor MCFADYEAN moved as an amendment, "That the Council

declares its readiness to accept the Jubilee Memorial Fund in order to add it to the Council Bursary Fund."

Mr. HUNTING seconded the amendment, which was lost, five voting for and eleven against.

Mr. TRIGGER'S proposition was then put and agreed to, and Mr. MULVEY'S resolution for the adoption of the report was carried.

Steel Memorial Fund.

The SECRETARY read the report, which stated that the following resolution had been passed as a recommendation to the Council:—"That for the present two medals be presented only, and that a committee of selection be formed, who will report to the Council the names of those to whom the medals should be awarded."

On the motion of Mr. TRIGGER, seconded by Mr. DOLLAR, the report was adopted.

Publication Committee.

Mr. DOLLAR read the report, which was adopted.

Court of Examiners.

The SECRETARY read the report, which showed, with regard to the examinations in London, that in Class A, seven candidates were examined and five passed; in Class B, 14 were examined and 10 passed; in Class C (Oral), 16 were examined and 10 passed; and in Class C (Practical), 25 were examined and 16 passed. In Scotland, in Class A, 21 were examined and 13 passed; in Class B, 36 were examined and 22 passed; in Class C (Oral), 31 were examined and 21 passed; in Class C (Practical), 35 were examined and 22 passed.

On the motion of Mr. BARRETT, seconded by Mr. LAWSON, the report was adopted.

It was moved by Professor MCFADYEAN, seconded by Mr. MULVEY, and resolved:—"That the secretaries be instructed to supply, for the information of the Council in future, the names of the educational bodies granting certificates to students who present themselves for examination for the first time, to say what subjects are inscribed thereon, and the dates of passing the examinations."

At the request of Professor EDGAR, the certificate of a student was produced for the inspection of the Council, and on the motion of Professor EDGAR, seconded by Mr. MULVEY, it was resolved that the validity of the certificate in question should be enquired into.

Board of Agriculture.

The PRESIDENT presented the report of an interview he had had with the President of the Board of Agriculture, which, on the motion of Mr. DOLLAR, seconded by Mr. MASON, was adopted, and the thanks of the Council were accorded the President for his able representation.

After some discussion it was moved by Professor MCFADYEAN, seconded by Professor WILLIAMS, and agreed to, "That the President be asked to have another interview with Mr. Long to ask that gentleman if he could see his way to having the old title of the "Veterinary Department of the Board of Agriculture" restored.

Public Health (Scotland) Act.

The PRESIDENT drew the attention of the Council to the action of the Glasgow Corporation in opposing clause 71 of the Public Health (Scotland) (No. 2) Bill of 1896, and on the motion of Professor WILLIAMS, seconded by Mr. TRIGGER, it was resolved:—"That this Council enters its protest

against the adoption of this clause, as suggested by the Town Council of Glasgow, and that the President of the Local Government Board, the Highland Agricultural Society, the Town Council of the City of Edinburgh, as trustees of the Dick College, be also asked to enter their protest against the adoption of this clause."

It was also resolved, on the motion of Professor McFADYEAN, seconded by Professor PENBERTHY, that the President should be empowered to take whatever action seemed to him necessary together with any of the societies mentioned in the foregoing resolution.

Date of Examinations.

It was resolved that the Written Examinations should take place on the 10th July, and that the Oral Examinations should begin in Scotland on the following Tuesday.

Fellowship Examination.

The next Fellowship Examination was fixed for Wednesday, the 13th May.

Appointment of Examiner, Class "A," Anatomy.

Mr. J. Vaughan, F.R.C.VS., F.Z.S., was elected as examiner in the place of Veterinary-Captain Butler, retired.

Election of Officers.

Messrs. Woodger and Warner were appointed auditors for the ensuing year; Messrs. Butters, McOnie, Gale, Todd, Slocock, Sheriff, Rogerson, Spooner, Mahon, Singleton, Irving, Perryman, and Whiteman-Smith were nominated as scrutineers; and the President, Mr. Hunting, Mr. Wragg, Mr. Mulvey, Mr. Dollar, and Professor McFadyean were appointed as a Dinner Committee.

Grant for Annual Dinner.

A sum of £25 was granted towards the expense of the annual dinner.

Motion by Mr. Hunting.

Mr. HUNTING then moved the following resolution:—"That the resolution carried towards the end of the quarterly meeting of Council, held in January, to the effect that a previous resolution of Council concerning the educational certificates was 'in violation of the bye-laws,' be expunged from the minutes." He said that at the last meeting a handful of tired men voted that the deliberate conclusion arrived at at the previous meeting was in violation of bye-laws. If that sort of thing was allowed to go on, it would tend to disorderly conduct in the Council Chamber. To accuse a previous meeting of doing a thing in violation of the bye-laws, if allowed to go on, would lead to members accusing a previous meeting of worse things than that.

Mr. KIDD seconded the motion.

Mr. DOLLAR said that it was not the Council which was erring, but Mr. Hunting himself, and that whenever the Council in connection with the matter had gone off the rails, it had been either under Mr. Hunting's representation, or under his immediate direction.

The PRESIDENT said the question was whether the resolution, which was passed some three months ago, was a violation of the bye-laws?

Mr. DOLLAR traced the history of the matter from 1891, when the General Medical Council concluded to accept no divided certificate, down to the passing of the resolution which Mr. Hunting's motion sought to expunge. In the first instance, he said, the Council decided to accept no divided certificate; but Mr. Hunting wrote, producing the impression in Edinburgh, that divided

certificates would be accepted. The registration committee then again reversed the position of affairs; and now, for the fourth time, the question had again been raised, and Mr. Hunting was once more endeavouring to make the Council contradict itself, and run the risk of legal proceedings. He (Mr. Dollar) hoped the good sense of the Council would save them from such a ludicrous exhibition.

Professor McFadyean thought that no more important resolution had come before the Council for a long time. The rescinding of a resolution could only be justified by showing that that resolution was wrong; and the only justification for Mr. Hunting bringing forward his resolution would be his ability to show that the action which he and the Council originally took was strictly legal. He (Professor McFadyean) claimed that it was not legal; that it was highly illegal, inasmuch as it declared that a student possessing a certificate, or two certificates, setting forth that he had passed in specified subjects, but not all at one time, was eligible for examination. Mr. Hunting, when President of the College, had directed Mr. Hill to write a letter to Edinburgh, which said in effect, "I know of no regulation which says that all the subjects should be passed at once," and it was communicated privately to the schools in Edinburgh, and they immediately began to act upon it, and admit students who presented divided certificates.

Prof. Williams: No, no!

Professor McFadyean, continuing, said that in London all the time Mr. Hill was refusing to accept such certificates and he continued to refuse to accept them to this day. At the time when the matter cropped up the Council were governed by a bye-law which said "A student must produce a certificate acceptable to the General Medical Council": and he maintained that the regulations of the General Medical Council were perfectly explicit, and that all subjects had to be passed at one time. In his view it was not a case of any ambiguity in the bye-laws. It was simply a covert attempt to lower the standard of general education.

Professor Williams said that at the time he knew nothing at all about the letter alleged to have been written by Mr. Hunting, that no matter how or when the certificates were obtained students were eligible for examination. He went by the instructions of the Council, and admitted his students on the understanding that if they possessed educational certificates, although they might have taken three or four sittings to obtain it, they were eligible for examination, and until the meeting of the Council which opposed his arrangement he knew nothing of the letter sent by Mr. Hunting, as President, to Mr. Rutherford, nor did he know one single word about the letter sent to Mr. Mathew until afterwards. He had full faith that everything was arranged that men were to pass a certain standard without any restriction as to the time of passing. He opened his college and the students entered on that understanding. There was a great deal more underneath the question than appeared on the surface. It was supposed that the smaller schools, having no one at the back of them, would go to the wall. He thought in all justice to men who were financially affected to the extent of their fortune in conducting schools of veterinary science, that the Council should not pass a resolution making it an impossibility. To think that a man who was to become a veterinary surgeon should pass that high examination at one sitting was beyond all reason and common sense. He should therefore vote for Mr. Hunting's motion.

Professor Dewar asked, if the resolution of Mr. Hunting was not passed, in what position would it leave those students who had already entered the veterinary college and those students at the last examination, who were sitting in class "A," and who had entered with divided certificates? Was it going to be retrospective so far as they were concerned. ("No, no.")

The PRESIDENT said the resolution which was carried some time ago was simply an expression of opinion of the Council; there was no alteration of the bye-laws.

Mr. Hunting's motion was then put and carried, 12 voting for it, and 10 against.

Professor MCFADYEAN said the matter was a very serious one, and pointed out that there did not stand in the minutes any such resolution as that quoted.

Motion by Mr. Mulvey.

Mr. MULVEY asked and obtained the permission of the Council to withdraw the following resolution which stood in his name, with a view to amendment:—"That there shall not be more than three examinations held during the year—one in March, April, or May, one in July, and one in December or January. An examination shall not be held in a class unless 18 candidates at least in such class are presented for examination in the country where such examination is to be held."

At the conclusion of the ordinary meeting of the Council a special meeting was held to consider certain resolutions set down by Professors Penberthy, Edgar, and Shave.

Motion by Professor Penberthy.

Professor PENBERTHY moved the following resolution:—

"That at least twenty-eight days prior to the date fixed for the examination every candidate for the Fellowship Degree shall forward his thesis to the Secretary, who shall then forward all theses received to the Chairman of the Examining Board, or to such of the Examiners as he may nominate."

Mr. HUNTING seconded the motion, which was agreed to.

Motion by Professor Edgar.

Professor EDGAR then moved the following motion:—

"Students who enter the veterinary schools shall, prior to their first Professional Examination by the R.C.V.S., produce a certificate entitling the holder to be registered as a medical student."

He said the importance of having clearly-defined statements upon which the Council were to act from time to time had been most painfully and clearly manifested during the recent meeting. That they should be compelled to rescind at one meeting that which they deliberately had passed at another, was necessarily causing them to look in the eyes of the profession that which they had been described as—a set of meddlers and muddlers. His object in bringing forward the motion was to make the bye-law sufficiently clear. He merely asked the Council to give effect to what had been the intention of the Council during the last five years, and what the majority of the profession believed to have been the intention of the Council, in spite of the dust which had been thrown in their eyes. There had been an attempt to show that the veterinary student need not be so well educated as the medical student, and to show that the whole duty of a veterinary surgeon was to fire horses, deliver cows, and give colic drenches. That had been seriously contended by the Editor of the VETERINARY JOURNAL.

Professor WILLIAMS: I deny every word you say.

Professor EDGAR said they were asked to believe that an average lad must go to school until he was 18 years of age before he could pass the lowest standard which the medical profession demanded of its students. He maintained that any average lad of 16 was perfectly able to pass the maximum standard demanded from medical students. He simply asked the Council to put an average examination on veterinary students. He asked the Council to

vote as deliberately as they could on the matter, and to remember that their vote to-day exhibited not to the few tired men who were in the council chamber, not to their little profession, but to the public at large, their estimate of the value of the preliminary education upon which a professional education was to be built, and if they nullified it by their vote they would say at once that they believed the veterinary student was an inferior creature, from an educational standard, to the medical student.

Professor PENBERTHY seconded the motion.

Mr. BARRETT said it was an important resolution, and, in view of the hour, he thought it would be better if the meeting was adjourned.

Professor WILLIAMS said that the assertions of Professor Edgar had certainly taken his breath away from him, because they were entirely new to him. He never had Professor Edgar in his mind when he wrote the article mentioned, and he never stated that he wished the standard of the educational examination to be lowered. What he did say was that he supported and maintained the standard of examination, and that he thought it unfair that the examination should be passed at one and the same time. He proposed a direct negative.

Professor MCFADYEAN said it seemed to him that the members of the Council on that question might fall into three categories. There were some who were no doubt in favour of it on the ground that education was not detrimental to the veterinary student, and on the ground that if the Council adopted the higher standard, they were quite likely to get enough students to recruit the profession. On the other hand, there were some who probably had no very strong feeling one way or the other. There were others—and Professor Williams was in the category—who would be injured financially by the adherence to the high standard of education. There was another class who had already said that they were in favour of adhering to the higher standard of examination, but who had said that the bye-laws, as they at present existed, were ambiguous. Mr. Hunting and Mr. Barrett were in that class. The question was by far the most important one that had come before the Council for the last four years. The whole question had already been pronounced upon by the profession four or five years ago. He thought the profession deserved to be consulted. There was only one way of doing that, and that was to make it a test question at the next election, and the way to do that was for those of them who were in favour of a higher standard to resign their seats on the Council and to stand again.

Professor DEWAR proposed that the motion should be adjourned to the July meeting.

Mr. BARRETT seconded the proposition, which was supported by Professor PRITCHARD, and carried, 13 voting for and 9 against.

The following notice of motion standing in Professor's Shave's name—"That stable management be struck out of the second or 'B' examination"—was also adjourned to the July meeting.

Professor MCFADYEAN: I beg to tender the resignation of my seat upon this Council.

Professor EDGAR: I beg to do the same.

Mr. DOLLAR: I shall also resign.

Mr. MULVEY: I shall do the same.

Mr. HARTLEY: I beg to do so also.

Notice of Motion by Professor Dewar.

Professor DEWAR gave notice of his intention to move in due course—"That meat inspection be struck out of the fourth or 'D' examination."

The Council then adjourned.

ROYAL COLLEGE OF VETERINARY SURGEONS.

The Examinations in London.

The Written Examination in the various classes was held on Tuesday, March 24th, at the Examination Hall of the Royal College of Physicians and Surgeons, Victoria Embankment, S.W. The Oral Examinations at a meeting of the Court of Examiners, 10, Red Lion Square, W.C., on the 26th, and the Practical portion of the Final Examination and Class B at the Royal Veterinary College, Camden Town, on and between the 26th and 28th.

The following students passed their final examination :—

Mr. W. Denington, Shepherd's Bush, W.
,, A. H. Berry, Streatham Hill.
,, H. Williams, Lincoln.
,, H. A. Lenox Conyngham, Moneymore, Ireland.
,, R. Spooner Hart, Calcutta.
,, J. Stewart Wood, Walton-on-Thames.
,, A. Doyle Bingham, Poona, India.
,, J. A. H. Engel, Liverpool.
,, Harry H. Worrow, Shadwell, E.
,, A. J. Curtis, Bideford, N. Devon.
,, Harry Edie, Camden Road, N.W.
,, J. Hughes.
,, W. James Heley, Leighton Buzzard.
,, Stanley W. Jones, Dartford, Kent.
,, R. C. Mathews.
,, J. L. Webb, Bishop's Stortford.

The following students passed their second examination :—

Mr. A. F. Deacon.
,, C. D. Stewart.
,, A. N. Swanston.
,, W. H. Anderson.
,, R. W. Carless.
Mr. J. Chalmers.
,, T. Elliott.
,, J. W. Oakley.
,, A. Hudson.
,, E. T. Goodall.

The following students passed their first examination :—

Mr. D. S. Dickman..
,, G. S. McNabœ.
Mr. R. B. Mearman.
,, J. McWharrie.
Mr. J. H. Poles.

Arthur W. Hill, *Secretary.*

The Examinations in Scotland.

At meetings of the Board of Examiners held on March 24th for the written examination, and on and between March 27th and April 1st for the oral and practical examination, the following gentlemen passed their final examination and having registered were admitted Members of the Royal College of Veterinary Surgeons :—

GLASGOW COLLEGE.

Mr. J. McLean, Largs.
,, J. Brown, Airdrie.
,, R. McDonnell, Ballycastle, Antrim.
,, M. E. White, Glasgow.
,, J. Watson, Shettlestone.

DICK COLLEGE.

Mr. J. Caldwell, Largs.
„ P. J. Harris, London.
„ W. H. Nicol, Davidson Mains, Edinburgh.
„ D. Reid, Auchtermuchty, Fife.
„ W. T. Casewell, Newport, Salop.
„ C. J. Clifford, Dunkalk.
„ R. Henderson, Carlisle.
„ A. C. Smart, Edinburgh.
„ J. Walker, Melbourne, Australia.
„ R. F. Watson, Lanark.

NEW COLLEGE.

Mr. J. Bibby, Holmrock, Carlisle, Cumberland.
„ J. B. Cowt, Manchester.
„ T. Dickinson, Aspatria.
„ J. Lyons, Benderden, Antrim.
„ W. Russell, Cork.
„ W. Rostron, Manchester.
„ R. J. Munnaise, Killmalloch, Limerick.

The following students passed their second examination :—

GLASGOW COLLEGE.

Mr. W. Burke.
†„ J. J. Smith.
„ P. McKinlay.
Mr. J. W. Conchie.
„ R. H. Johnstone.
„ J. C. Erskine.

DICK COLLEGE.

Mr. J. G. Blackwood.
„ H. J. Bradbury.
„ C. Farrar.
„ A. Hodder.
„ T. D. Lambert.
* „ R. H. Lambert.
Mr. A. McGown.
„ E. C. Orton,
„ W. J. Foley.
„ J. L. Frood.
„ T. Loughran.
„ J. O. Brien.

NEW COLLEGE.

Mr. H. Briggs.
„ H. G. Brittain.
Mr. G. Barras.
„ J. C. Blake.

The following students passed their First Examination :—

GLASGOW COLLEGE.

Mr. D. Frew.
Mr. A. McDowell.

DICK COLLEGE.

Mr. R. Burt.
„ A. Lauder.
Mr. W. J. Lewis.
* „ F. Leech.

NEW COLLEGE.

Mr. T. C. Howatson.
„ A. Scotson.
„ H. Whipp.
„ E. J. Finucane.
Mr. C. H. Harrison.
„ T. R. Weedall.
„ S. Robson.

Marked thus * passed with second honours.
„ „ † „ „ first honours.

R. RUTHERFORD, F.R.C.V.S., *Secretary to Board of Examiners.*

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting took place at the Grand Hotel, Birmingham, on the afternoon of Friday, February 14th, 1896. The President (Mr. G. Wartnaby, of Burton-on-Trent) occupied the chair, and there were also present: Professor Penberthy, Messrs. Gibson, Blakeway, Stanley, Malcolm, Wilson, Birmingham; Crowhurst, Leamington; Green, Dudley; Carless, Stafford; Burchnall, Loughborough; Barnes, Cheadle; Wiggins, Simpkins, Market Harboro'; Blunt, Lutterworth; Smith, Tunstall; Beddard, J. Cartwright, Wolverhampton; Paley, Prickett, Walsall; Barling, Ross; Whyte, Tenbury; Olver, Tamworth; Coe, Stoke-upon-Trent; Slipper, Tamworth; Kidd, Melton Mowbray; Taylor, Stourbridge; Green, Alfreton; Gooch, Stamford; Trigger, Newcastle; Collett, West Bromwich; Barrett, Nuneaton; and H. J. Dawes (hon. sec.). Visitors: Messrs. Hills, Conyngham, Walker, Clay, and Vet.-Captain Marriott.

Election of Officers.

The PRESIDENT said he had very great pleasure in proposing as his successor in the chair, Mr. Gooch. The latter had been one of the most regular attenders at the meetings of the Association, and he was a man who had at heart the best interests of the profession. If Mr. Gooch were elected, he was sure he would fill the office both with credit to himself and satisfaction to his fellow members.

Mr. STANLEY seconded in brief but complimentary terms, and the motion was carried unanimously.

Mr. GOOCH returned thanks for the distinction conferred upon him. He was proud to receive such a high mark of their confidence and esteem. He was not going to deny that he had striven for it, because he thought it was the duty as well as the privilege of every man to try to rise to the foremost position. It would be impossible for him to forget the responsibility attaching to the office of President of such an important Association as this, but he felt sure his duties would be materially lightened by the support which the occupant of the chair had always been able to command from the members. The Midland Association, both numerically and financially, was one of the most influential bodies in the whole profession, and to be at the head of such an organization was an honour much coveted, and one which, now that he had achieved it, he should endeavour to uphold.

Vice-Presidents.

In addition to the retiring President, who for one year is Vice-President *ex officio*, it became necessary to elect two officers.

Mr. STANLEY proposed, and Mr. SMITH seconded, Mr. A. Green.

Mr. GOOCH proposed, and Mr. TRIGGER seconded, Mr. Gibson.

No other propositions being forthcoming, Messrs. Green and Gibson were declared duly elected, and both gentlemen briefly acknowledged the compliment.

Treasurer.

Mr. MALCOLM proposed that Mr. J. Blakeway be re-elected hon. treasurer of the Association. He said they had got a good man in Mr. Blakeway, whom they ought not to part with.

Mr. BARNES seconded the resolution, which was carried.

Secretary.

Mr. GOOCH said he had great pleasure in proposing that Mr. H. J. Dawes be re-elected hon. sec. The work of the past year had found out what kind of man he was. There had been several extra duties devolving upon the Hon.

Sec. during the past twelve months, all of which he had carried out with the utmost satisfaction.

The PRESIDENT said he wished to have the pleasure of seconding the resolution, as it gave him an opportunity of thanking Mr. Dawes for the very kind and able way in which he had assisted him during the past year. He could assure them that his duties as President had been very easy and pleasant in consequence of Mr. Dawes' assistance, and whilst tendering to him his personal thanks, he could assure the Association that they possessed a Secretary of exceptional skill and ability.

Mr. WIGGINS having supported the resolution, it was carried unanimously.

Mr. DAWES thanked them very much for having re-elected him as Hon. Sec. The position was no light one, but if his efforts met with the approval of the Association he could assure them he was amply rewarded.

Grunting in Horses.

The HON. SEC. read the circular letter from the Lincolnshire V.M.A.

Mr. TRIGGER thought the subject offered sufficient scope for discussion at a future meeting, when there was less work to do than on the present occasion. He suggested that it be placed on the agenda at the next meeting, and he concluded by moving a resolution to that effect.

Mr. GOOCH said that as the next President of the Association, he should like to second that proposition. He understood that it was the intention of the Association to hold the next meeting on the Lincolnshire side of the Midlands, and that being so, he would do his utmost to induce Mr. Howse, of Lincoln, to introduce the subject.

Mr. STANLEY agreed that it was the most important question that had been brought under their notice for many years, and it was not thoroughly understood by professional men at the present time. No matter what they learnt at college, they found things a great deal different in practice.

The PRESIDENT said he was quite with them in thinking that the matter had better be deferred till the next meeting.

The resolution was then carried.

Professor PENBERTHY now delivered an address on the "Joint Diseases in Young Animals."

He said he was present in compliance with a promise made to the President some considerable time ago. He had experienced considerable difficulty in choice of a subject, and applied to a member of the Association, who suggested that he should occupy their time for a short while on the subject of joint diseases in young animals. He might say that it was always a pleasure to be associated with their president (Mr. Wartnaby), and it was equally a pleasure to appear before his colleagues of the Midland Counties Veterinary Medical Association. He regretted not having been able to prepare a paper as he would liked to have done on a subject which he considered an extremely important one. It was one which gave the profession a good deal of material for thought, and often a good deal of disappointment in practice. He was encouraged to undertake the task in the hope of getting the benefit of their experiences of the conditions he was about to refer to. Reference to the names that had been given to the joint diseases of young animals would be enough to show what doubt and error existed in the minds of those who had to deal with such affections under the title which had been given to his address. He could not very well attempt to deal with one disease alone, though he proposed to dwell especially on one form of joint disease. They knew that in young animals, the joints, for some reasons not very well explained, were specially liable to diseases of an infective character, and also diseases associated with development. They knew that until adult life,

developmental activity was manifest, particularly in the bones and at the ends of the long round bones.

He proceeded to put the various diseases under the following headings:—

1st. Rickets. 2nd. Tuberculosis.
3rd. Strangles. 4th. Pyæmia.

He had left the more important one until last because he thought that to country practitioners it afforded the most trouble, and, consequently, the greatest interest. Rickets was a disease which more commonly affected the bones of dogs and pigs, and less commonly foals, calves, and lambs. It was a disease which never affected adult animals, and was not usually observable until some months after birth. Taking it generally, there was an increase in the cartilage basis, which was improperly or incompletely ossified. There were the minute changes that went on in the bone, but with those he did not propose to deal on that occasion. This was a disease differentiate from the others by being non-febrile, and by which the constitution of the animal was little affected. The bone tended to bend and became softer, and enlargements of a non-painful character manifested themselves at the ends of the bone. They found that particularly in puppies and young pigs, and in such cases the condition was probably due to some hygienic defect, especially the lack of sunlight, sometimes the lack of food, or at other times, some maltreatment of the dam during utero gestation. He mentioned rickets particularly in order that they might be able to differentiate between it and the other diseases to which he wished to draw their attention more in detail.

Tuberculosis affecting the joints was perhaps more commonly noticed in the pig than in other animals, though from some statistics he gathered that *post-mortem* examinations proved in about one per cent. of the cases of disease found in young cattle the joints were tuberculous. They rarely found tuberculous changes in the joints of the limbs of young horses. In every case of tubercular arthritis he had met with, he had been able to discover that the foals had been largely fed with cow's milk. Animals suffering from this disease show no signs of it until they are of some age, generally from six months to three years, but it would be a rare case with which he had not yet met: consequently the consideration of the clinical features of that condition need not occupy any more time.

A disease of the joints which there was good reason to suppose was due to the virus of strangles, he thought had been largely overlooked. Experimental pathologists had by a use of the isolated contagion of strangles produced a condition which explained a good many of the cases which were called rheumatic arthritis in young stock. It was known pretty generally that when the virus of strangles entered a young body, it was not necessary, to produce death, that there should be appreciable pus formation or special disturbance of the respiratory system. It was sometimes found that animals died of septicæmia very suddenly. The only thing to be observed was a rising of temperature and a swelling of the joints. This occurred in animals very young and more frequently in animals from twelve months to two years old. His own experience was that they were bound to include strangles as one cause of non-suppurative joint disease in young animals.

There was a word in the medical dictionary to which they often had recourse, and that word was "rheumatic." It was an extremely convenient word and sometimes covered a considerable want of knowledge. The term rheumatic had probably been applied to this form of joint disease from the fact that when one joint was affected, other joints were liable to be, and then they said it was a rheumatic swelling. The virus of strangles has been found in the blood from animals which had been suffering from the so-called *rheumatic arthritis*,, and at the *post-mortem* examination he had never found any evidence of chronic rheumatism. He did not deny that the lower

animals suffered from rheumatism, although he had heard a well-known authority say they did not. He himself had been disposed to believe that young pigs were especially liable to the infection. In those cases several of the litter, from six weeks to four months old were suddenly noticed to be indisposed to walk; a hot and painful swelling at the joints, which frequently yielded to treatment such as would be adopted in rheumatism in the human subject.

But the disease to which he would draw particular attention was a historic disease—specific arthritis, pyæmia neonatorum, omphalo-thrombo-phlebitis, joint ill, or navel ill. The term pyæmic umbilical infection was now frequently used to indicate the affection. This disease, which most commonly affected foals and lambs, and less frequently the other domesticated animals, although no domesticated animal was free, when it did appear in a place generally had an abiding influence there; indeed, some places were scarcely ever free from the condition. This special disease was one that was particularly noticed in the higher-bred and more valuable animals. Perhaps one may be inclined to think that the reason for that was that they heard more about the higher-class animals, but he did not think that covered all the ground. He believed there were causes in existence which rendered high bred animals more liable, one being the extra attention that was given them, and among others—the common foaling box or lambing pen, and the reception of mares for services and parturition. So far as he could gather, it was not only more noticed in high bred stock, but it was in reality more common among them. This disease has several points which are interesting. In the first place it is generally said to be hereditary, that is, it is conveyed from the parent to the progeny. He was going to say he had never seen any reason for such a view; but he would rather say he had not met with satisfactory proof of this quality. Before he dealt with views he did not coincide with, he should mention what he regarded as the true pathology of this so-called umbilical infection. He believed it was due to the entrance of a microbe, which most commonly took place at the umbilicus, but possibly through the respiratory or alimentary passages, or wounds. The manifestations of the disease were generally appreciable before the thirtieth day of life. He had gone over a large number of cases which he had kept in record, and it was in all appreciable before the twenty-first day after birth; in most before the seventh day. There was a considerable proportion of cases which showed, perhaps, no purulent lesions, no manifestation—that was, it was not recognised, and months might elapse before their attention was drawn to it. The virus which produced that condition he did not think had been satisfactorily demonstrated. He did not think they could tell whether it was a micrococcus or a small bacillus. Several Continental writers have stated that it was a micrococcus which they had found in every case. He might add that in England they had not been able to isolate that microbe, but they had found very short bacilli, which had been cultivated and had produced symptoms of the disease on being injected into the blood. A knowledge of the life-history of the organism would help them materially. He himself believed it was one which lived outside the body a long time, but one must speak of these things with reserve until the life-history was demonstrated. He thought the circumstances in connection with the disease were against it being an ordinary organism, because all animals were born with open navels, which generally got in the dirt, where there were plenty of organisms to set up suppuration. The mode of entry of those organisms could generally be demonstrated to be at the umbilicus. They entered very soon after birth, and there set up a suppurative process, and according to the activity of their growth, so would be the manifestations of the disease. If they grew very rapidly, there was plenty of chance of their being disseminated by the blood stream, and

then the special developmental activity of the joints seemed to determine the joints as the situation most suitable for the growth of those micro-organisms. He was not sure that those micro-organisms might not enter by another channel. Consequently, in considering the case of this particular joint-disease—and he thought the same applied to lambs as to foals—he had come to the conclusion that it was produced by a micro-organism, which most commonly entered at the navel, and among the predisposing causes he would enumerate anything which tended to retard the healthy closing of the navel. Beyond that he did not think it depended on the dam at all—of course, allowing for her bringing disease-germs from one part to the other, and conveying them year by year to the newly-born animal. In more than one case, or rather a series of cases, which he had investigated, he had found that abortion in mares was very closely associated with this disease in the foal. The great majority of cases of navel ill occurred in animals which were born just a little before their time. They could quite conceive how in an animal which had not been long enough in the womb for its development to be brought to the proper pitch, that the navel would remain open and be unhealthy. Beyond that, however—which, of course, would prevent the umbilicus closing at the proper time—beyond this he had not discovered any part attributable to the parent. He knew his opinion was not generally received, and he was hoping to hear further evidence, either on one side or the other, because he kept an open mind in such matters. It was generally held that males were very much more subject to the infection than females, which was supposed to be due to their mode of urinating, which kept open the umbilicus longer, or, at any rate, rendered it more unhealthy, and better soil for the growth of micro-organism and the formation of pus.

The disease was sufficiently familiar to them to allow him to pass over a description of the symptoms. They had suppurative inflammation, in a good many cases of the joints, but it was not at all necessary that these changes should go on. A case occurred where swelling of the joints lasted, hung fire, got worse, got better, and apparent recovery took place. But if the swelling lasted very long, the chances were that some of the structure of the womb muscles were so affected that the animals were comparatively worthless. The treatment was to be divided into two parts—the curative and the preventive. There was much more hope for the preventive treatment than for the curative, in which they would no doubt agree with him, although he did not for a moment lay down that in this infection treatment was of no avail. He had, from some experience, a good deal of faith in potassium iodide. They had foals from three weeks to six months to deal with, and they knew how difficult it was to administer sufficient medicine to the very young. They should begin at the foundation and destroy the virus at the navel if possible. The local applications to the joints, in his opinion, called for comparatively little attention. They must, in practice, do something with the swelling of the joints, and that which interfered less with the joint, in his opinion, was best. He had tried the application of iodine solution after washing in soda, but he had never done that without giving the animal potassium iodide internally.

The preventive treatment was, however, in his opinion, the most hopeful. He had two letters in his pocket concerning a very serious outbreak with which he had been connected during the past two years, and in those studs there had been no cases last year. There was nothing very particular in the treatment he was going to suggest, except as regarded the thoroughness with which the details ought to be carried out. They recognised that it was a contagious disease, and they should begin by removing the chances of its existence. One most inevitable cause of maintaining the disease was the foal-box. By bringing the mares to the one box to foal every time everything

became contaminated. The mares should foal in their own boxes, which should be disinfected as much as possible. He strongly believed in the free use of disinfectants—of course, he was speaking of valuable animals, where expense was a secondary consideration. Bring into use some non-irritant solution before the young animal is born. He did not say inject the vagina, though that might be a good thing, but wash all the back parts. Then the plan which had been carried out in those cases where signs of the disease had occurred, had been to tie the umbilicus as soon as the foal was born. Before the cord was broken, if possible, disinfect the ligature, tie it round the cord, and then cut the cord between the foal and the dam. Whether in the case of a foal or a lamb, the part should be thoroughly well disinfected with carbolic acid, or something which does not irritate, and in the case of valuable animals, something should be used to cover the part for a day or two. The dying parts should be dressed as often as possible—once a day was not too often—with some strong antiseptic, such as carbolic acid. He did not claim this as his own idea, although it had been practised with conspicuous success. The dusting on of some dry powder, such as sulphate of zinc and flour, or a little borax and flour, was what he generally advised, and it had been followed by extremely good results if the parts had been well washed. The carcases of all foals dying should be immediately destroyed—burnt if possible—and after the foaling season was over there should be a thorough disinfection of the whole of the breeding place. In the case of lambs, he thought the shepherd had specially to be attended to. It was essentially to get a new fold and turn all the fresh animals into the fold, and bring animals which had been in the old fold back.

In conclusion, he expressed the hope that his remarks would afford scope for ample discussion, and that one and all would benefit thereby.

The PRESIDENT said the matter was one which affected them all very deeply, and more especially the country practitioner. It was a disease upon which they all had a good deal to learn, and he was extremely glad to find that Professor Penberthy had chosen the subject for his address that afternoon. He invited the members to discuss the question.

Mr. TRIGGER said they could not help recognising how much they were indebted to Professor Penberthy for coming down to the Midlands to lay before them such an interesting matter. He did not know whether they, as country practitioners, were prepared to controvert anything which had fallen from the lips of the professor. At the same time they no doubt experienced a difficulty in reconciling the scientific facts with the actual facts which existed in their practice. The infections which had been alluded to were such as he had had painful experience of in past years, because it was always painful to a man, who had his heart in his profession, and who found himself coping with cases which terminated disastrously. He did not think they need consider much the question of rickets in dogs and pigs. He thought tuberculosis of the joints was rare in horses. He was struck with the professor's observations about not finding any trace of tuberculosis in the dam. True, but in his experience one or two bad outbreaks of tuberculosis in cattle and pigs were to be traced to the male parent distinctly. They sometimes had to look a little further than the dams. With regard to the navel ill, as it was called, he recognised its contagious character. An important point in his mind was that the disease was seldom observed in the case of animals which were foaled out at grass. Let a mare be in a perfect state of nature, and they had little joint evil. He thought the professor had underrated the importance of heredity, which, in the speaker's opinion, played a more important part than was given credit for.

Mr. CARLESS said he had learnt a great deal from the professor's address. He was in accord with the professor when he suggested that strangles was a

frequent cause of it. He had seen cases were a foal had died, or was taken ill, in less than 21 days; he had seen it happen in 24 hours. He quite agreed with the professor as to the importance of using disinfectants freely immediately after birth.

Mr. OLVER, after first thanking Professor Penberthy for his address, said he had seen a case of rickets in a foal, or, at any rate, an enlargement of the joints in certain parts which much resembled rickets. He understood the Professor to say that rheumatics was rarely or never seen in foals.

Professor PENBERTHY: No, we have no trace of it in foals.

Mr. OLVER (continuing), said he had observed a case where the animals had been turned out in low river pastures, and on damp grass.

The PRESIDENT said he felt this was far too important a subject to be hurried over, as they seemed compelled to hurry over it that afternoon, and with Professor Penberthy's permission he should ask them to adjourn the discussion until the next meeting, when they would have more time to go into it. He begged to thank the Professor very much indeed for coming amongst them, and he moved a resolution to the effect that the discussion be adjourned.

The HON. SECRETARY seconded the motion, which was carried.

Next Place of Meeting.

On the motion of the HON. SECRETARY, seconded by Mr. J. R. GREEN, it was resolved to hold the next meeting of the Association at Nottingham.

Votes of Thanks.

Mr. A. GREEN proposed a vote of thanks to Professor Penberthy for his attendance and services.

Mr. CROWHURST seconded the motion, which was heartily carried.

Professor PENBERTHY, in response, thanked the members for the patient hearing they had accorded him, and he was looking forward with considerable interest to the next meeting, when the discussion would be resumed.

Mr. STANLEY proposed a vote of thanks to the retiring President (Mr. Wartnaby) and the other officers of the Association for their services during the past year. There was no time for any lengthened remarks, but he felt sure the proposition would meet with a cordial acceptance.

Mr. GOOCH seconded, and the motion was carried unanimously.

The PRESIDENT briefly responded, and in turn thanked the members for the generous support which they had at all times extended to him.

Convivial.

The annual banquet was afterwards held, Mr. Wartnaby again presiding. A toast-list appropriate to the occasion was gone through, and the proceedings, though necessarily brief, were thoroughly enjoyable.

H. J. DAWES, *Hon. Sec.*

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE annual meeting was held at the Royal Hotel, Southampton, on Tuesday, April 2nd, the members present being T. B. Goodall (president), Messrs. J. W. Barford, J. T. King, J. T. Burden, E. W. Baker, C. Carter, G. J. Gould, J. F. Simpson, (President R.C.V.S.), and C. Pack (hon. sec.)

Apologies were read from several members and friends regretting their nability to attend.

Morbid Specimens.

The PRESIDENT showed the lower jaw of a mare with irregular and loose teeth. The animal was eleven years of age and had been in poor condition

since about three years of age. He had advised her being destroyed, and had secured the head. Some of the teeth were quite loose, and the alveoli also contained ingesta which had apparently kept up a continual irritation of the part. He also exhibited the lower jaw of a 30-year-old horse in which the teeth appeared to have been worn almost entirely through the crown, thus showing that a set of teeth under ordinary conditions would about last the lifetime of a horse, providing he was not carried off by disease, and the teeth themselves remained in a sound condition.

The minutes of the last meeting having been read and signed, the meeting proceeded to the

Election of Officers for the Ensuing Year.

On the proposition of Mr. E. W. BAKER, seconded by Mr. J. W. BARFORD, Mr. J. T. King was unanimously elected president.

Mr. KING having thanked the members for the honour paid him, Mr. Goodall vacated the chair in favour of Mr. King.

The vice-presidents elected were Messrs. J. F. Simpson, J. W. Barford, E. W. Baker, and C. Carter.

Mr. Pack was re-elected to the offices of secretary and treasurer.

The Exemption of Veterinary Surgeons from Serving upon Juries.

A letter was read from the Secretary of the R.C.V.S. containing the reply of the Council to a resolution made at the last meeting of the Association asking the Council to exert their influence to obtain the exemption of veterinary surgeons from serving upon juries, and to take steps for the revision of the scale of fees paid to veterinary surgeons when giving evidence in criminal cases, so that they may be placed on a similar footing to solicitors and medical men.

The letter was to the effect that the Council could not see their way to do anything in the matter, and suggested that the better way would be to appeal to the local parliamentary representatives.

After discussing the letter it was resolved that the Secretary again write, "That the Association expresses disappointment at the answer received and desires the Council to again give the whole matter their earnest consideration."

Grunting in Horses.

The circular letter from the Lincolnshire Veterinary Medical Association, asking for a general opinion of the members on the above subject, was now read, and after most of the members present had expressed their opinion of the matter, it was decided that a reply be sent in the following terms:—"That, in the opinion of this meeting, 'grunting' in horses does not necessarily constitute unsoundness."

Support to candidates for Council was the next item on the agenda, and it was decided that the hearty support of the members should be accorded Mr. Simpson at the forthcoming election of Councilmen, and that the Secretary write the members of the Association, not present that day, informing them of this.

Mr. E. W. BAKER, M.R.C.V.S., then read his paper on "Iodine and its Compounds."

Mr. President and Gentlemen,—At the last meeting of the Southern Counties Veterinary Medical Society, the advisability of continuing to hold our meetings as before, or amalgamating with the Royal Counties Veterinary Medical Society was discussed. Feeling that it was not advisable to let our own Society die an unnatural death, I suggested each member in turn should introduce a subject for discussion, and promised I would be the first to do so. Such is my excuse for bringing forward my paper to-day, and in doing so I beg you to offer original remarks, and thus

make up for my shortcomings in simply robbing others' brains in order to bring before your notice "Iodine and its Compounds."

Iodine belongs to a group of non-metallic elements, and is either obtained from the mineral iodides and iodates, or from kelp—the ashes of seaweed. Like chlorine, iodine possesses powerful affinities; it combines readily with many organic and inorganic substances, and is a powerful disinfectant, antiseptic and deodorant. Dr. Lauder Brunton states the most destructive substances to bacteria are corrosive sublimate, chlorine, bromine, and iodine.

Iodine, when applied externally, is a powerful irritant and vesicant; it is seldom used directly as a caustic, but concentrated solutions or liniment are used as stimulants and resolvents in chronic inflammation of joints, synovitis periostitis, bursal enlargements, strains of tendons, thickening of periosteum, bony enlargements (exostoses); scrofulous and other tumours, and in induration of the udder. It is likewise a powerful parasiticide, especially efficacious in both tinea tonsurans and tinea circinata (the two forms of ringworm), in the treatment of which Mr. Carter recommends the following formula:—

Iodine	2 drams.
Light oil of wood tar	1 ounce.

In the human subject painting the affected and circumjacent skin with a solution of iodine is strongly recommended to prevent the extension of erysipelas. Iodine solution is injected into joints affected with white swelling, into the cavity of the pleura in empyæma and into other internal cavities without producing ill results, unless caries or necrosis of the bones be present, but whether these lines of treatment will ever be likely to be adopted in veterinary practice appears doubtful.

In chronic pleurisy in the human subject after evacuation, iodine injections remove the great fœtor often present from the decomposition of pus.

Solution of iodine injected into the cavities of abscesses or serous cysts, glandular enlargements, etc., is beneficial by retarding their development and assisting their dispersion.

Inhalations of iodine are strongly advised by medical writers in bronchial catarrh and other affections of the lungs and air passages, and might perhaps be more largely applied in the treatment of the lower animals.

Iodine, when applied externally, is absorbed into the blood partly by the skin and partly by the air of respiration in the form of vapour. In application to glandular enlargements, the absorption is stated to be often more effectual when applied in a zone around instead of directly over the swelling. As a stimulant in sore throat, and counter-irritant in pleurisy, it may be applied as a tincture or aqueous solution, being especially efficacious in arresting the formation of an exudate, and hastening the removal when outpoured.

Solutions of iodine mixed with or alternated with tar, sulphur, and the mercurials, prove useful in eczema, psoriasis, and the various forms of skin trouble produced by the presence of parasites—including, as before stated, ringworm. In the treatment of indolent ulcers, and for the stimulation and deodorisation of unhealthy and malignant wounds, either an ointment or dilute tincture is of the utmost service.

A useful antiseptic dressing for wounds may be made of—

Iodine	10 grs.
Iodide of potash	10 grs.
Water	1 oz.

A useful mange dressing of—

Iodine	½ oz.
Iodide of potash	2 drms.
Tar	1 oz.
Lard	8 oz.

Iodine is an expensive but very effectual deodoriser and disinfectant,

decomposing harmful organic compounds chiefly by uniting with their hydrogen, and also destroying the lower forms of vegetable and animal life. It is said to be contra-indciated in high fever, but this can hardly apply invariably, or so much success would not attend its administration in purpura. Hertwig states in most affections of the eye it does more harm than good. The ointments of the iodide of lead and mercury are considered of much value in the treatment of enlarged lymphatic glands, etc., their chief effect being stimulation, but undoubtedly a certain amount of the iodine is absorbed and acts specifically.

Large doses of iodine are irritant and corrosive. Vapour insufficiently diluted causes irritation, cough, and spasm of the glottis. Medicinal doses stimulate secreting glands and quicken their capillary circulation and metamorphosis, hence are alterative and deobstruent. Iodine is especially beneficial in the treatment of diabetes insipidus in horses, allaying the thirst and arresting the abnormal flow of urine in an almost miraculous manner. How the marked effect of iodine in diabetes is attained is not well explained, as the only physiological action credited with being capable of exerting a curative influence in the removal of thirst and the antiseptic arrest of excessive tissue metamorphosis; but no other antiseptic or tonic is to be depended upon in such cases. Iodide of potash is not nearly so effectual as the crude iodine, but it is surmised iodine in combination with iron may exert a more direct tonic effect, and I have achieved beneficial results in the administration of liq. calcis iodinatæ.

Iodine possesses the power of causing other substances to be excreted by the saliva when they are combined with it; notably is this the case with iron and quinine. Iodine is excreted in the salivary glands, the saliva containing it is swallowed, iodide again absorbed by the stomach, and carried back by the circulation to the salivary glands once more, hence the reason why iodine is so persistently retained in the system. Another being that it becomes combined with the albuminous matters of the blood and tissues, the combination being only slowly broken up. Both saliva and mucus are stimulated to flow by the action of this agent. Iodine and the iodides act upon the lymphatic system and promote absorption; their action being especially marked in cases of glandular enlargement. In their action on the tissues, they displace or replace chlorine, but the quantity of urea excreted is but little effected by iodine.

In human surgery the application of tincture of iodine to the gums is said to be beneficial in periosteal toothache, and to arrest the receding action of the gums. This may very probably be found to be the case in canine surgery.

Like chlorine and bromine, iodine is a powerful oxidising and antiseptic agent. It resembles mercury in its alterative properties and in stimulating glands. Its stimulation of the skin and mucous surfaces ally it to sulphur and arsenic.

Iodine decreases the rapidity of the pulse when absorbed into the blood but has little effect upon the blood pressure. It has a very slight tendency to raise the temperature; is freely absorbed into the blood from mucous surfaces, and the sodium iodide quickly enters from the alimentary canal. It is eliminated by the urine, nasal mucous membrane, saliva, intestinal mucus, and milk, in all of which it may readily be detected; as it is more readily eliminated by the saliva than the urine, it remains a considerable time in the body. It is readily diffused and detected in the various secretions and five minutes after administration of a soluble preparation iodide has been found in the urine, whilst the urine of a horse which had one single large dose in bolus afforded indications of iodine for three days (Finlay Dunn). In long continued doses it may produce atrophy of the mammæ, ovaries, and testes.

It has been stated that very large doses affect the nervous system, causing

even paralysis of the muscles, but I have failed to find a record of this resul in veterinary medical literature; whilst iodism is scarcely, if ever, seen in veterinary practice.

When applied to the unbroken skin it causes a slight warmth, and afterwards a little itching. Stronger applications produce a painful burning sensation and desquamation of the epidermis. In still stronger solutions vesication and abrasion ensue.

When iodine is swallowed, contact with the alkaline secretions ensures solution and conversion into albuminate and sodium iodide. Two to three drachms given to dogs was speedily evacuated by vomiting.

Horses and cattle are less susceptible to both the local irritant and general constitutional effect of iodine than the human subject and dog, probably owing to the large quantities of starch in the alimentary canal. Forty to sixty grains (Hertwig) given to horses twice a day for 14 days continuously, caused merely slight diarrhœa with black evacuations and increasing emaciation. As much as two oz. daily have been given to horses, and even more to cattle, with no untoward results (Finlay Dun). Given in the solid form the iodine would be slowly and perhaps only partially dissolved and absorbed, and during tardy solution must have, in great measure, been neutralised by contact with starchy food.

In *The Veterinary Record*, Vol, VI., No. 307, appears an article on the Treatment of Purpura Hœmorrhagica, by Mr. J. A. W. Dollar, from which one gathers Professor Dieckerhoff, of the Berlin Veterinary School, was the first to advise and use iodine in the treatment of this most fatal disease. The writer goes on to record the history of a very bad case treated by another German named Schaumkell, from date of admittance on January 16th, with a temperature of 105 4/5ths F.; respirations 30, and pulse 75 per minute until the 24th of January, when the patient was deemed convalescent. During that period the animal had injected into his trachea 18 drachms of iodine solution (of strength one part iodine, 5 iodide potassium, 100 water) twice a day for first three days, then brought down to once a day later to 12 drachms until January 24th, when all internal remedies are stopped. This, the writer explains, is an aggravated case, and that Dieckerhoff gives but 3 to 9 drachms of the solution twice a day in ordinary cases.

Since this article, Mr. Dollar and others have tried the treatment and reported their experiences, and the result is that iodine must henceforth be considered practically a specific for purpura, and few as my cases of the disease are, I shall certainly put the treatment to the test.

Morton records an instance of atrophy of the testicles with loss of sensual desire in a bull as a result of the administration of iodine, but doubts are entertained of its effects in arresting the secretion of milk. Moderate doses in properly soluble form produce in the domestic animals well marked results.

Iodine stimulates the secretion of the nasal mucus and saliva and of the pancreatic and biliary fluids; increases tissue metamorphosis and the removal of waste products, and improves the appetite. Various morbid processes are checked, excessive thirst and inordinate secretion of urine are arrested, and glandular enlargements absorbed. Patients taking iodine acqire a tolerance of it.

Iodine is not cumulative. In man it has been given for more than a year without deleterious consequences, and with due cessation of the administration, its effects speedily cease. It is given to a man as liq. iodi. B.P. in cases of vomiting and might prove a beneficial agent in this disorder in dogs.

Iodine should be administered two hours after eating in order to diminish the proporiion otherwise converted into the mild insoluble starch iodide. It is advisedly given for a week or ten days, withheld for one or two, and, if necessary, again resumed.

It is considered more satisfactory (although less convenient) to administer the iodine in water dissolved with a little iodide of potassium, than in a ball, in order to secure a more perfect solution and certain action. The tinctures have no advantage over the watery preparations. For external application.

Iodine	1 part.
Iodide of potassium	½ ,,
Water	8 ,,

may be used pure or diluted according as to whether mild stimulation or strong blistering effect is desired.

Iodine water in strength of 1 in 7,000 is said to destroy the spores of bacilli in one day. It is recommended in ozæna, but probably in veterinary practice it would be superseded by iodoform, pure or diluted with quinine and bismuth.

Iodine has been detected in the blood, saliva, and urine, and even in the urine of a sucking child whose mother was taking iodine.

Dr. Huchard claims to have cured 20 cases of angina pectoris with sodium iodide

As previously stated iodine is freely absorbed into the blood from mucous surfaces, and the sodium iodide quickly enters from the alimentary canal. In the blood the element is first combined with sodium, but this salt appears to be decomposed, iodine temporarily set free, some of the red corpuscles broken down (if the iodine is in large quantity), and bloods effusions and urine ensue—Not recorded in veterinary literature.

The iodide of sodium and albuminous compounds pass very quickly from the blood into the tissues and especially into the secretory organs and lymph glands, but are very scantily noted in the nervous centres. By this liberation of iodine in the tissues it is enabled to leave them again passing rapidly through the protoplasm of the body, and sharing in its metabolism by combining very loosely with the albuminous molecules no doubt. Iodine accelerates tissue change. Iodine is rapidly excreted, part of the sodium salt is thrown out unchanged, part decomposed and iodine again set free to exert its local action remotely. The diuretic action of iodide of potash is believed to be due to the potassium.

It is conjectured iodine either spares the liver (the chief source of urea) or accelerates the metabolism of the plasma rather than the tissue elements themselves, as no increase of urea or bodily wasting accompanies this effect.

In the human subject, in addition to the effect of iodine applied externally, and administered in the form of iodide internally, it has a most characteristic effect upon syphilitic affections.

In subacute and chronic inflammations of various kinds, such as exudations and effusions in connection with the joints and serous cavities, and some forms of pulmonary consolidation, iodide of potash may promote absorption by stimulating local nutrition: with the internal administration the external application of iodine being combined. Scrofulous affections in either man or the lower animals, especially when principally confined to the lymphatic glands, are benefited by the local application of iodine and the internal administration of the iodide of iron, On the other hand, phthisis is rarely affected by the iodides. In enlargement of the liver and udder, and in mesenteric disease, as well as in anæmia, the iodide of iron is notably serviceable.

In chronic rheumatism in which debility is not a pronounced symptom, and in arthritis, iodine is beneficial.

Potassium and sodium iodides retain the chief properties of iodine, but are less irritant and less active as gland stimulants, but more apt to affect the kidneys.

Bing holds that free iodine and its readily decomposable compounds are

narcotic—paralysing the cerebral centres by direct action on the nervous structures, and finally proving fatal through the respiratory centre.

The heart vessels and body temperature are unaffected by iodine, and the depressing effects on these of iodide of potassium is said to be caused by the potassium.

Iodide of potash is prescribed as an alterative and resolvent in the second stages of inflammation after the acute symptoms have subsided. It aids the removal of hydrothorax, recent exudations on mucous membranes, and of glandular enlargements.

American practitioners prescribe iodine solutions in combinations with small doses af carbolic acid in febrile attacks, particularly when depending upon malaria, and Dr. Anderson considers it a cheap substitute for quinine in these cases, curing ague where quinine has failed.

The iodides of iron, copper, and mercury exhibit mainly the action of their powerful bases.

Professor Williams strongly advocates the internal and external administration of liquor hydriotatis et arsenici in the treatment of psoriasis and, unless my memory serves me badly, the late much beloved and respected Professor Robertson used to speak in equally high terms of its action.

The administration of half-a-drachm each of iodine, iodide of potassium, camphor, and belladonna extract is attended with the best results in the irritable cough, profuse discharge of catarrh, sore throat, and bronchitis (especially of a chronic or epizootic type) amongst horses.

Inhaled, diluted with steam or dry air, it soothes the irritable respiratory surfaces in horses, arrests muco-purulent discharges, and is by some recommended in hoose in calves as an agent fatal to the filariæ.

Iodide of potassium is an indirect antispasmodic, administered with marked benefit in asthma and emphysema.

Iodide of potassium is said to be remarkably useful in curing and alleviating aneurism in the human subject by causing a reduction of blood pressure by the alkali, the coagulating effect of the iodine on the blood, and the specific effect af iodine on the chronic inflammatory changes in the wall of the artery which have led to the dilatation.

Iodide of potassium is an alterative, deobstruent, antispasmodic, and diuretic. As an external application to the unbroken skin it is not nearly as effectual as iodine and other of its compounds, it having been stated that it is inert unless decomposed by the sweat to enable it to become absorbed. Iodide of potassium depends for its action partly on the iodine and partly on the potassium. It is readily absorbed (as are the other alkaline iodides) in internal administration. Iodine is supposed to be set free from the iodide, is taken up again by the albuminous substances, and the entrance of the iodine molecule into their composition causes them to undergo more rapid metamorphosis.

In the *Journal of Comparative Pathology and Therapeutics*, Vol. V., Part II., Professor Nocard directs attention to internal administration of iodide of potash in the treatment of actinomycosis in which he gives the most satisfactory accounts (confirmed by many others since) of the result of his experiments. Until quite recently this disease was treated by the local application of soluble phenyl (a compound of iodine and carbolic acid), now this is proved unnecessary, and the only untoward result of the new treatment is a peeling of the epidermis with, in some instances, a certain amount of loss of hair.

When administered as an antidote to mercury and lead poisoning, the mercury and lead are set free by it from their combination with the tissues, and entering once more into the circulation are eliminated most rapidly by the kidneys, salivary glands, probably by all the mucous membranes and skin.

Arsenic is said to modify the ill effects (Iodism) of iodide of potash and prevent the eruption. The iodides of potash and soda may each be given where iodine is indicated, but these salts are less irritating, and have the advantage of being diuretic, hence are especially indicated in ascites and hydro-thorax.

In man large doses are said to irritate the stomach and disorder the digestion. In the blood iodide of potash is converted into the iodides and iodates of ammonium and sodium, and during its elimination ozone is liberated (Bucheine); the lymphatics are stimulated, tissue metamorphosis is increased and waste products got rid of. It has been stated (Maillet, quoted by Tabourin), that two or three drachms of iodide of potassium given to a horse acted as an irritant poison, and that three or four caused fatal intestinal hœmorrhage. This must be a fabulous mistake, for as much as from four drs. to one oz. have been given with no more ill results than slight diuresis and occasional catharsis. Those doses given twice a day do not produce in horses any irritation or symptoms of iodism.

No better agent than this can be used in the treatment of lymphangitis in the horse, especially when combined with iron; where any excess of effusion is present, the stimulating and antacid effects of ammonia will be found of assistance. In chronic rheumatism it has the advantage over iodine of being diuretic.

Iodoform is described as a local anæsthetic. It is antiseptic and disinfectant. The chief use to which it is applied in veterinary medicine is (by means of the insufflator) in nasal gleet, either pure or diluted with equal parts of quinine and bismuth.

Sir Joseph Lister, in an address delivered at King's College Hospital on January 18th, 1893, says: "It is unquestionably true that iodoform exercises a powerful antiseptic influence upon wounds, but it is a very peculiar antiseptic, having extremely little influence over bacteria outside the body; the most probable explanation of this apparent anomaly being that suggested by Behring, viz., that iodoform produces its beneficial effects, not by acting directly upon the bacteria, but by inducing chemical changes in their toxic effects, he (Behring) having ascertained as a matter of fact that some of these toxines are altered chemically by iodoform, and at the same time rendered harmless.

A most useful method of applying iodoform to wounds is by means of cotton wool impregnated with it or by means of an ointment of the following composition:—

Iodoform..	gr. iv.
Ol. Eucalypt.	oz. i.
Vaseline	oz. i.

Ringer highly recommends its use in eczema. It has been tried in a multiplicity of cases internally with little, if any, beneficial results.

Iodal is a similar but non-odorous preparation. The poisonous effects of iodoform noted in horses sometimes are counteracted by hourly 10 grain doses of bicarbonate of potash.

Biniodide of Mercury is almost as irritant as corrosive sublimate. Is very rarely used internally, but in the form of ointment is applied as a stimulant, counter-irritant and caustic. It is a very effectual agent in the reduction of bony and ligamentous enlargements, spavin, splints, ringbone, &c., penetrates deeply, arrests chronic inflammation, and develops healthy action in chronic enlargements and indurations of spraiued tendons, bursæ, and joints; is applied as a counter-irritant in sore throat when the other blisters have been resisted. Is recommended by some in the early stages of farcy!

For ordinary purposes one part biniodide to eight of lard is generally used, but Mr. Dollar recommends one biniodide and ten vaseline, prepared in a water bath,

it keeping a better colour and sweeter than the other preparation. To avoid damaging the hair follicles, rubbing down a little ext. belladonna with the unguent is advisable. As a stimulant to the chest walls in pleurisy and pneumonia, 1 part biniodide to 16—32 lard is of much advantage. Heat (especially of the sun) often has a marked effect upon its action.

Green iodide of mercury has been described as a useless addition to the pharmacopœia, but in the so-called mallenders and sallenders at the bends of the knee and hock joints I have seen a marked benefit attend its use.

Iodide of sulphur being non-poisonous makes an excellent mange dressing for the dog,

Iodide of ammonia and sodium would most probably be very efficacious in the treatment of canker of the ear of the dog, as in man it is given internally, and used externally in thickening of the membrane of the ear. Iodide of potassium is also of value in this affection.

Iodide of zinc is used in enlarged tonsils and glandular swellings.

Iodide of iron is a tonic, alterative and astringent. It secures increased number and development of blood globules, improves nutrition, and assists in promoting absorption of solid and fluid exudates. Mr. Morton spoke highly of it in the treatment of polyuria and nasal gleet. The syrup may be used in canine practice.

Iodide of copper resembles in its action that of other copper salts. It is of benefit in œdema of the legs, and as an astringent in ill-conditioned ulcers and inveterate grease. No sufficient proof of its superiority over the sulphate has been given.

Iodide of lead. The iodine is supposed to have a beneficial effect upon the corpuscles of the spleen, and the lead to cause contraction by acting upon the involuntary muscular fibres of the organ. The ointment is applied to enlarged glands.

Gentlemen, I have endeavoured to bring the views of others prominently before your notice, and, in thanking you for your kind attention, must ask you to add to this kindness by a liberal discussion on the subject.

Authorities quoted: Ringer, Mitchell, Bruce, Lauder, Brunton, Finlay Dun, and others.

Discussion.

Mr. CARTER thanked the essayist for his paper. He had not much experience of iodine as an internal remedy, but should feel inclined to use it in the future in such cases as recommended by the essayist. He had found strong iodine liniment one of the best dressings for enlarged bursæ, and iodoform a capital dressing for wounds.

Mr. BURDEN said his experience of iodine was also confined to its use as an external dressing.

Mr. BARFORD related a case of purpura hemorrhagica which he had recently had under treatment, and the result obtained with the iodine treatment was exceedingly satisfactory.

Mr. GOODALL had found iodine and pot. iodide very efficacious in purpura hemorrhagica if persevered with, and had also found tinct. iodine good as a dressing for skin in cases of herpes, but did not believe in it for eczema.

Mr. SIMPSON congratulated the essayist on the excellence of the paper, and after hearing it read felt that the stock of drugs in one's surgery might be considerably reduced. He emphasised the use of pot. iodide in actinimycosis and iodoform in cases of canker of the dog's ear.

The PRESIDENT had used iodine as a dressing in skin diseases, especially ringworm, also internally in diabetes in canine patients with the best results. He had also found iodoform to be one of the best dressings for wounds in dogs.

Mr. BAKER having replied to the several speakers, on the proposition of Mr. GOODALL, and seconded by Mr. SIMPSON, a very cordial vote of thanks was accorded Mr. Baker for his paper.

It was decided to hold the next meeting at Southampton in June.

After votes of thanks to the President and the ex-President, the members adjourned to dine together.

The Dinner.

The dinner was served by Mr. Henland in his best style, and all the members stayed to partake.

After dinner the usual loyal toasts were proposed, followed by that of the President of the Royal College of Veterinary Surgeons.

In proposing the toast the CHAIRMAN spoke in glowing terms of the manner in which the presidential duties had been carried out during the past nine months, and he felt sure that the dignity of the office had suffered nothing by the conduct of their fellow-member who had given so much of his time for the benefit of the profession, and whom he was sure they all felt proud to have amongst them that evening.

Mr. SIMPSON, in reply, thanked the members for their expression of confidence in him, and, in replying to the toast as the President of the R.C.V.S., gave the members some idea of the work to be got through and the time required for its performance. He also related some incidents in his recent interview with the President of the Board of Agriculture, the probable benefits that would accrue to the members of the profession, and concluded by expressing a hope that all the members would this year attend the annual meeting of the R.C.V.S., and stay and support him at the dinner in the evening.

Several songs were sung, and a very convivial evening was spent.

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

AT the last meeting of this Society, held in Leeds, on Friday, 24th April, ult., the following address, "On the Contrast between the Present and the Past Practice of Veterinary Medicine and Surgery," was given by Principal W. WILLIAMS, New Veterinary College, Edinburgh. At the outset he explained that he was not going to give them a scientific speech, but a brief history of the profession—the methods of treatment in the past and in the present. First of all, there was the farrier, who was generally the village blacksmith, but sometimes a coachman. The farrier disdained to look at anything but a horse, and considered himself disgraced if he were asked to look at a cow; he was a horse doctor in every sense of the word. Then came the cow doctor, who never thought of interfering with the practice of the farrier. Both of these men, whose poverty was often as great as their pride, disdained to look at a dog; to be called in to look at a dog was beneath their contempt. Neither the horse doctor nor the cow doctor would consent to castrate a horse. This was left in the hands of a travelling tinker, and often in the hands of gipsies, who did their work well. He had seen these men operate. Now the veterinary surgeon did all the work that these four men did. Professor Williams proceeded to describe some of the early diseases, and the primitive systems of treatment that in some instances were adopted. He said he thought that the late Mr. Collins was the first to suggest that, instead of weakening the feet, they should be allowed to remain strong, both as a preventative and as a cure for laminitis. Some of the old theories, exploded for more than a quarter of a century, were being re-introduced; they had now suggestions that in laminitis, in navicular disease, and in side bones they

should make fissures in the feet in order to make the expansion. Thrush and cancer were then treated on similar lines to now.

Dealing with spavin, which was then considered to be rare, most hind-leg lamenesses being ascribed to stifle and hip joint diseases, he had seen numerous cases of splint lameness treated for navicular disease and turned out to grass. Nowadays navicular disease had greatly diminished. There was not certainly one-tenth of the cases they had ten years ago. He did not think it was due to the breeding, but to the shoeing; they found navicular disease incurable and splint lameness curable in time. In past days, no matter whether the horse was lame in front or behind, he was generaliy bled. Then there were specialists for the treatment of quittors, and there were some men who had the reputation of being able to cure glanders.

Lymphangitis was called water farcy, and the disease was treated very much as now. After describing ophthalmia and its treatment, Principal Williams went on to speak of internal diseases which, in his younger days, were all treated alike: there were heavy bleedings in all cases, and often a purgative in chest affections. This practice not proving successful, the stimulant treatment, propounded by Dr. Tod in human practice, became the fashion, but was not carried out to the same extent as at present by some practitioners. When this was found not to answer, the counter irritant theory began to be carried out, it being considered that the artificial destroyed the natural. There was also external blistering, for they said the inflammation must be killed. If the animal did not die in a few hours, if he still continued to struggle, some applied the actual cautery, in the form of a red-hot shovel to the sides; in cases of abdominal pains, to the abdomen. Perhaps some of his hearers hardly knew how animals were bled in the past. They bled them all, no matter what their complaint was. If a horse breathed quickly he was bled; if he was off his food he was bled; and if he had colic pains he was bled. He had seen the viscera of a pullet given as a cure for colic. He was there last year, and heard a farmer tell a veterinary surgeon that he had administered it to a horse, but that the animal was no better. Another had given a sick cow red herring porridge. He had seen a live frog given for constipation of the bowels. They might think that he was romancing, but nothing of the kind; he was simply telling them facts. The cow doctor was the first to be "undone." Then the horse doctor fell from his high estate and combined the duty of cattle doctor with that of horse doctor. On the appearance of foot and mouth disease about 1842, and pleuro-pneumonia about two years later, the horse doctors, following the example of the few qualified veterinary surgeons, turned their attention to cattle. These diseases spread all over the country, and drinks for foot and mouth and pleuro were sold in thousands. The ordinary treatment for foot and mouth disease was bleeding, purging, and feet dressing. Some of the old cow doctors maintained that even foot and mouth disease, and pleuro-pneumonia were "Tail ill." They bled the animals from the tail, made a large incision, filled it with tar and salt, bound it up tightly, and, to prove that they were correct, the tail often sloughed off below the binding. And now he came to the veterinary surgeons, who were bringing to bear their scientific knowledge, which was hardly more successful than the accredited knowledge of the farrier. These men (as well as the farriers) believed in the correctness of their treatment. They had some theory to support them, but animals died. Then homœopathy became to be tried, and such men as Haycock and Moore were credited with very successful results. He was no believer in the homœopathic doctrine, but he must confess that the results were most startling, and even death robbed of its horror. An animal tortured by irritants and driven mad by alcoholic

stimulants, died a most agonising death. Horses invariably got through chest affections with homœopathic treatment.

Reverting to the bleeding of horses, he recalled a singular case in Lancashire. A veterinary surgeon called in to a case in consultation said, "Bleed him." The reply was, "We have taken 22 quarts of blood from him yesterday;" and the consultant answered, "Take 22 more." He need not tell them that they had not a chance to do that. He remembered that some of the veterinary surgeons, especially those from Scotland, and some of the old farriers, thought that pleuro-pneumonia and foot-and-mouth disease were not contagious diseases. Professor Dick taught that foot-and-mouth, pleuro, and rinderpest were not contagious diseases. As to the actual cautery in cases of abdominal pain, that treatment was highly recommended by Professor Dick in enteritis. It was no wonder that the late Mr. John Lawson, of Manchester, used to say that a man had to fill a 50 acre park with dead horses before he knew his profession. So much for veterinary science in the days of which he was speaking. They now, of course, smiled at the absurdity of the violent remedies of the past, but the men practising them were honest in their belief and applied what they thought was proper. If a man then dared to have an opinion of his own, depend upon it he had a very unhappy life of it, if it were in the power of people to make it so. Because cases recovered, these men thought they were successful. They did not count the number of animals they had killed.

In conclusion, Professor Williams said it had been his endeavour to point out what was considered the proper method of treatment in his younger days, and to compare it with what was in vogue now. The Professor was warmly applauded on resuming his seat, and throughout his interesting speech was punctuated with laughter and applause.

ONTARIO VETERINARY COLLEGE CLOSING.

THE closing exercises of the Ontario Veterinary College were held recently. The entrance of the Principal, Dr. Andrew Smith, and the invited guests, was the signal for enthusiastic applause on the part of the students. Among those present on the platform were Lieutenant-Governor Kirkpatrick, Robert Jaffray, John Aikins, R. J. Score, Dr. Duncan, Dr. Sweetapple, W. W. Withrow, Dr. J. O. Orr, and others.

Dr. SMITH'S address called attention to the fair attendance at the college this year, despite the depression, students being present from all over the continent, and from England, Scotland, and the West India Islands. He also referred to the fact that the veterinary profession was improving at the present time.

Dr. DUNCAN read out the list of prize winners and graduates. The gold medallist for the year is Mr. G. R. C. Merriam, of Jamaica, West Indies. The gold medal for dissecting, granted by the Toronto Industrial Exhibition, was won by Mr. J. F. J. Black.

The following is a list of the prize winners:—

GRADUATES.

William Agnew, Belgrave, Ont.; Fred. A. Armstrong, Fergus, Ont.; T. H. Agnew, Evanston, Ill.; Simon Beattie, Waterloo, Wis.; R. J. Besteel, Grafton, North Dakota; John F. J. Black, Dublin, Ireland; Paul Dudley Bray, Cannington Manor, Assa.; Arthur Brechter, Beaver Dam, Wis.; William G. Bunnell, Heywood, Manchester, Eng.; Basil Aubin Brown, Highbury, London, Eng.; Francis J. Braund, McGregor, Man.; Patrick Cain, New

Perth, P.E.I. ; Merton J. Chrisman, Frewsburg, N.Y. ; John L. Clark, Stratford, Ont. : Keller Lark, Cooperstown, N.Y. ; Edgar W. Culley, Avon, N.Y. ; Herbert Caldwell, Louisville, Ky. ; John Cramer, Elwood, Ind. ; Robert H. Craig, Bushton, Ill ; John A. Campbell, Teeswater, Ont. ; Edward Dingman, Maplewood, Ont. ; Richard A. Dennis, Adams, N.Y. ; John R. Donahue, St. Thomas, Ont. ; Charles H. Drake, New Haven, Conn. ; F. J. De Land Clinton, N.Y. ; A. F. Elliott, Grandin, North Dakota : Henry T. Ferguson, Lake Geneva, Wis. ; John B. Finch, Ramseys, North Jersey ; Albert B. Gay, Randolph, Vermont ; D. F. George, Overton, Ohio ; John F. Gillespie, Ridge Farm, Ill. ; Wm. J. Grady, Quincy, North Dakota ; N. O. Gilbert, Brooklyn, N.Y. ; A. Gibson, Berlin, Ont. ; Leopold Hay, Warsaw, Poland ; Chas. Haas, St. George, Ont. ; William W. Hall, Leeds, P.Q. ; Albert B. Hecker, Albany, N.Y. ; J. B. Hill, Canandaigua, N.Y. ; Roy F. Hoadley, Yorkville, Ill. ; Walter E. Howe, Delphi, N.Y. ; Walter N. J. Hurt, Matlock, Bath, England ; Alfred P. Husband, Nassagaweya, Ont. ; T. M. Hadwen, Wheatland, N. Dak. ; George R. Inglis, Campbellville, Ont. ; Johnson J. Irwin, Sheffordvale, Que. ; Roy E. Jackson, Tyler Hill, Pa. ; P. H. Johnson, Racine, Wis. ; J. E. Johnson, Texas, Ohio ; Elmer H. Judkins, Ohioville, N.Y. ; Chester P. Keith, Bridgewater, Mass. ; Thomas LeRoy Kelly, Lakeside, Ohio ; John C. Kingan, Pittsburg, Pa. ; Rudolph Kjerner, Rochester, Minn ; Wm. H. Kenwell, Cuba, N.Y. ; John Lawrason, St. George, Ont. ; Harry L. Leberman, Meadville, Pa. ; Wm. S. Longacre, Mantz, Pa. ; J. T. Leary, Ellicottville, N.Y. ; Newton G. Le Gear, Imlay City, Mich. ; John Dennis Macdonald, jun., London, England ; Robert W. McDonald, Jackson, Mich. ; Alexander J. McKay, Tavistock, Ont. ; Pete McNeal, Shickshinny, Pa. ; C. H. McGillicuddy, Lewiston, Me. ; Daniel Maher, Godfrey, Ill. ; H. E. Marshall, Ottawa, Ont. ; G. R. C. Merriam, Negril, Jamaica, W., Indies ; Sheard Moore, Lowell, Mass. ; Lemuel Mulligan, Ottawa, Ont. ; W. N. Neil Tower Hill, Ill. ; Brittain E. Nevel, Huntersville, Pa. ; Lewis A. Nutting, Syracuse, N.Y. ; John Oliver, jun., Columbus, Miss. ; J. D. Paxton, St. George, Ont. ; H. C. Peters, Greenleaf, Minn. ; J. Orville Reed, Danville, Pa. ; Andrew W. Reilly, Grand Valley, Ont. ; Llwellyn T. Richards, Granville, Ohio ; James L. Riddell, Denver, Col. ; Peter A. Robinson, Emerson, Man. ; Louis D. Regan, Emporia, Kan. ; Herman R. Ryder, Delphi, N.Y ; F. G. Scammel, Lafayette, N.Y. ; Charles A. Seaton, Bloomington, Ont. ; S. L. Shaw, Summer Hill, Ill. ; Geo. F. Sheppard, Edinburgh, N. Dakota ; Thomas Veitch Simpson, Yorkton, N.W.T. ; John J. Sparrow, Victoria, B.C. ; Ray J. Stanclift, Derby, N.Y. ; Wesley C. Stephens, Newmarket, Ont. ; Donald A. Stewart, Ivan, Ont. ; John H. Summers, Oswego, N.Y. ; Zera Strong, Carleton Place, Ont. ; James A. Stevenson, Morden, Man. ; Francis C. Simpson, Bridlington Quay, England ; J. W. Tooley, Lansing, Ont. ; J. Turnbull, Lowville, Ont. ; J. H. Ellsworth, Vrooman, Vroomanton, Ont. ; Richard E. Willis, Brampton, Ont. ; Arthur R. Walsh, Buffalo, N.Y. ; William Walker, Kingston, Ont. ; M. A. Whinster, Portage la Prairie, Man. ; E. J. Will, Moore's Store, Virginia ; Arthur Edward Williamson, Queenstown, Ireland ; David B. Wilson, London, Ont. ; George E. Wilson, Carleton Place, Ont. ; F. Lockwood-Wingate, Kingston, Jamaica, W.I. ; R. W. Wilkinson, Drumbo, Ont. ; A. C. Woods, Council Bluffs, Iowa, and A. G. Young, Bristol, Que.

SENIORS BY DEPARTMENTS.

Pathology (seniors)—Silver Medal—1st prize, silver, H. R. Ryder ; 2nd prize, F. Lockwood-Wingate ; 3rd prize, R. J. Stanclift, P. D. Bray.

Honors—F. A. Armstrong, J. F. J. Black, J. L. Clark, E. H. Culley, H. Caldwell, R. A. Dennis, J. B. Finch, H. T. Ferguson, L. Hay, W. N. J. Hurt, W. E. Howe, G. R. Inglis, J. E. Johnston, J. Johnson, R. Kjerner, C. P. Keith,

G. R. C. Merriam, A. J. McKay, W. N. Neil, L. A. Nutting, J. D. Paxton, J. L. Riddell, L. T. Richards, H. C. Peters, P. A. Robinson, T. V. Simpson, F. C. Simpson, C. A. Seaton, D. A. Stewart, J. Turnbull, J. H. E. Vrooman, A. R. Walsh, G. E. Wilson, E. J. Will, A. G. Young.

Materia Medica (seniors)—1st prize, J. F. J. Black; 2nd prize, H. F. Ferguson and F. L. Wingate (equal); 3rd prize, C. P. Keith.

Honors—P. D. Bray, J. P. Fitzgerald, H. E. Marshall, G. R. C. Merriam, R. J. Stanclift, F. C. Simpson, T. V. Simpson.

Chemistry (seniors).—1st prize, F. C. Simpson; 2nd prize, R. J. Stanclift; 3rd prize, B. A. Brown.

Honors.—J. F. J. Black, R. H. Craig, E. M. Culley, J. B. Finch, J. P. Fitzgerald, J. E. Johnson, C. P. Keith, G. R. C. Merriam, L. D. Ryan, H. R. Ryder, D. A. Stewart.

Morbid Anatomy (seniors).—Prize—H. R. Ryder.

Honors.—P. D. Bray, R. J. Stanclift, G. R. C. Merriam, J. R. Donahue, W. E. Howe, J. F. J. Black, F. L. Wingate.

Anatomy (seniors).—1st prize, silver medal, R. J. Stanclift; 2nd prize, J. F. J. Black; 3rd prize, E. W. Culley.

Honors.—Wm. Agnew, P. D. Bray, B. A. Brown, W. G. Bunnell, R. H. Craig, J. L. Clark, M. J. Chrisman, Herbert Caldwell, J. R. Donahue, R. A. Dinnis, T. H. Ferguson, W. E. Howe, W. W. J. Hurt, C. A. Haas, W. W. Hall, J. B. Hill, L. Hay, G. R. Inglis, J. E. Johnston, E. H. Judkins, R. E. Jackson, A. Kjerner, C. P. Keith, W. S. Longacre, G. R. C. Merriam, A. J. McKay, J. Oliver, J. D. Paxton, H. R. Ryder, P. A. Robinson, T. V. Simpson, F. C. Simpson, S. L. Shaw, J. J. Sparrow, G. T. Sheppard, D. A. Stewart, J. Turnbull, A. R. Walsh, E. J. Will, R. E. Willis, F. L. Wingate, A. G. Young.

Dissected specimens (seniors).—Gold medal, given by Toronto Industrial Exhibition Association, J. F. J. Black; 2nd prize, 30 dols., F. C. Simpson.

Entozoa (seniors).—P. D. Bray.

Honors.—W. Agnew, S. Beattie, J. F. J. Black, J. A. Campbell, R. H. Craig, E. W. Culley, L. Hay, W. E. Howe, R. C. Merriam, J. Oliver, J. D. Paxton, S. L. Richards, H. R. Ryder, T. V, Simpson, R. J. Stanclift, S. L. Shaw, F. C. Simpson, D. A. Stewart, F. L. Wingate, A. C. Woods.

Physiology (seniors).—1st prize, silver medal, P. D. Bray; 2nd prize, G. R. C. Merriam; 3rd prize, T. V. Simpson.

Honors.—J. F. J. Black, B. A. Brown, R. H. Craig, E. W. Culley, J. R. Donahue, J. B. Finch, L. Hay, W. E. Howe, G. R. Inglis, J. D. Macdonald, Wm. Neil, H. R. Ryder, S. L. Shaw, R. J. Stanclift, J. Turnbull, A. C. Woods, F. L. Wingate.

Best General Examination.—G. R. C. Merriam, gold medal, given by the Ontario Veterinary Medical Association.

Honors.—J. F. J. Black, T. H. Ferguson, Leopold Hay, W. N. Neil, L. T. Richards, H. R. Ryder.

JUNIORS, BY DEPARTMENTS.

Pathology (juniors).—1st prize, W. H. Wheeler; 2nd Prize, G. E. Totten; 3rd prize, W. J. Meloche and E. L. Bertram (equal).

Honors.—H. Buss, F. W. Bryant, G. C. Bowen, W. Brennan, J. B. Campbell, W. Caister, G. R. Caldwell, R. C. Cliff, T. J. Cooper, C. W. Clark, J. Dodd, G. P. Hayter, G. Hilton, F. Hodgson, J. Johnston, J. J. Keleher, F. A. Messinger, A. A. McLachlan, J. A. McKinnon, W. O. McHugh, G. A. McKenzie, I. S. Norton, R. D. Orr, T. M. Owen, J. H. Pierce, H. Pegan, J. R. Rochester, W. W. Richards, G. Rowcroft, J. Miller, W. McElroy, R. Marshall.

Anatomy (juniors).—1st prize, silver medal, G. E. Totten; 2nd prize, R. D. Orr; 3rd prize, R. C. Cliff and G. R. Caldwell (equal).

Honors.—Henry Buss, J. B. Campbell, Thomas Cooper, W. Caistor, George Hilton, Fred. Hodgson, J. N. Johnston, J. J. Keleher, A. McLachlan, W. A. McHugh, W. F. McIlroy, W. J. Meloche, J. P. Miller, I. S. Norton, W. W. Richards, G. V. Rowcroft, G. P. Statter, J. W. Will, S. A. H. Winsloe.

Physiology (juniors).—1st prize, silver medal, R. C. Cliff; 2nd prize, G. Hilton; 3rd prize, W. O. McHugh.

Honors.—C. W. Clark, J. J. Keleher, J. P. Miller, W. J. Meloch, W. W. Richards, G. V. Rowcroft, W. H. Wheeler.

Chemistry (juniors).—1st prize, Geo. Hilton; 2nd prize, G. V. Rowcroft.

Histology and Microscopy (juniors).—1st prize, T. J. Cooper; 2nd prize, C. W. Clark; 3rd prize, R. Cliff.

Honors.—E. Bertram, C. H. Bugbee, F. W. Bryant, T. W. Brown, G. R. Caldwell, J. B. Campbell, H. Chaney, J. Dodd, W. H. Erwin, G. J. Grange, G. R. Hayter, R. C. Harris, G. Hilton, F. Hodgson, J. N. Johnston, J. J. Keleher, G. A. McKenzie, W. F. McElroy, Wm McHugh, J. A. McKinnon, A. A. McLachlan, R. Marshall, W. J. Meloche, F. G. Messinger, J. S. Norton, R. D. Orr, T. Owen, J. H. Pierce, H. Pegan, W. W. Richards, J. R. F. Rochester, G. V. Rowcroft, G. Statter, A. E. Tweedie, C. A. Taylor, J. A. Winslow.

Primary Examinations.—Anatomy—F. G. Atwood, A. McK. Brock, A. E. Dennis, Joseph Gregg, R. J. Marion, W. D. Monk, W. H. Orme.

Materia Medica.— J. P. Fitzgerald, H. F. Hartnett, G. H. Munroe, W. H. Orme, G. A. Wehr.

PRIZES PRESENTED.

After the reading of the list, the prizes were presented by Lieut.-Governor KIRKPATRICK, who afterwards congratulated the College upon its success, and paid a high compliment to the instruction received there. It was gratifying to find that the college had a reputation throughout the world. He believed that in the future skilled veterinary surgeons would be more in demand than ever. He hoped that the students from other countries would take back pleasant remembrances of Canada, but he would like them to remember that Canadians were a high spirited people, who loved their country and the British flag, who, while they liked to be at peace with everybody, still if they were hit they would strike back.

Mr. W. W. WITHROW, President of the Toronto Industrial Exhibition, addressed a few words to the students, and congratulated the principal and those connected with the college on the intelligence of this year's class.

Dr. J. O. ORR also wished the students every prosperity, in a short address, and Mr. R. J. SCORE told the students of the pleasure he felt in being with them.

A compliment Mr. SCORE paid to Dr. Smith, the Principal, was received with great applause by the students.

Mr. JOHN AIKINS added his congratulations to those of the other speakers, and wished the students every success.

This ended the proceedings so far as the presentation of prizes was concerned, and there were then loud cries for "Johnson."

Mr. J. E. JOHNSON, president of the senior class, came forward and read an address to Dr. Smith, the address being accompanied by a picture of the entire graduating class of 1895-96.

Dr. SMITH tendered his thanks to the students for the expression of their goodwill towards him.

CONTAGIOUS DISEASES ANIMALS ACT, 1894.

SUMMARY OF RETURNS OF OUTBREAKS, for the four weeks ending April 18th, 1896.

ENGLAND AND WALES.

Pleuro-Pneumonia.	Swine Fever.	Glanders including Farcy.	Rabies.	Anthrax.	——
Outbreaks confirmed 1 Cattle, found diseased 7 Slaughtered, through exposure to infection 152	Outbreaks confirmed 467 Swine, slaughtered, diseased, or exposed to infection 5433	Outbreaks reported 43 Animals reported during the four weeks as attacked 93	Cases in dogs reported 52 Other animals ... 9 Destroyed, as having been exposed to infection 35	Outbreaks reported 25 Animals attacked 59	

SCOTLAND.

None	Outbreaks confirmed 30 Swine, slaughtered, diseased, etc. 434	Outbreaks reported 3 Animals reported, etc. 6	None	Outbreaks reported 11 Animals attacked 18	

IRELAND.

None	Outbreaks confirmed 94 Swine, slaughtered as diseased, etc. 598	Outbreaks reported 1 Animals attacked 1	Cases in dogs reported 49 Other animals 26 Destroyed, etc. 48	Outbreaks reported 1 Animals attacked 1	

SWINE FEVER STILL INCREASING.

DURING the first quarter of the present year there were 1,524 outbreaks of swine fever in Great Britain, compared with 1,300 in the first quarter of 1895, and 1,107 in 1894. The number of swine slaughtered as diseased or as exposed to infection was 19,596, against 9,584 in the first quarter of 1895, and 14,057 in 1894.

IN Germany, according to official returns made up to March 31st last, there were cases of foot-and-mouth disease in 1,214 parishes or districts, involving 3,026 farms; pleuro in 27 parishes and 58 farms; farcy in 36 parishes and 38 farms.

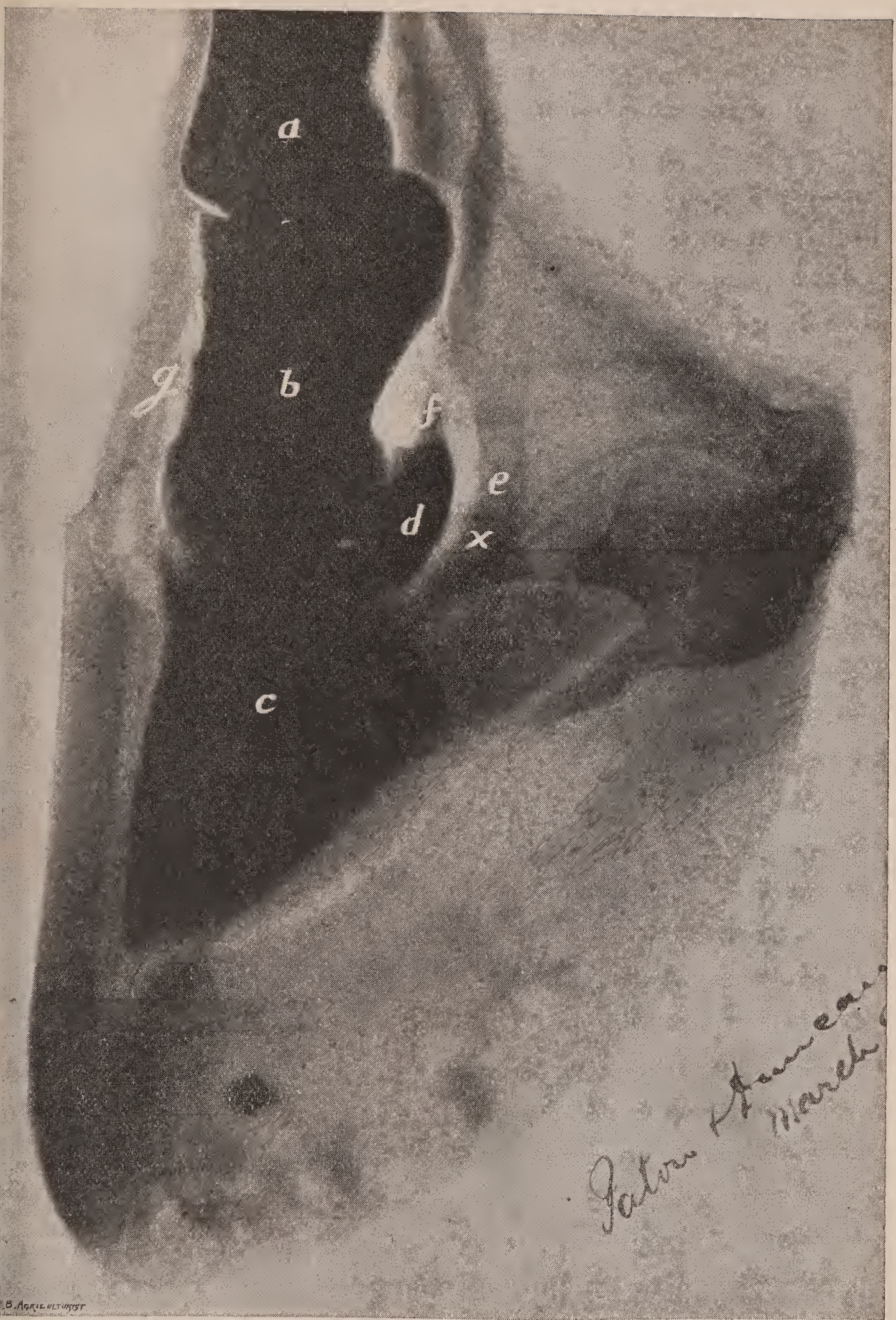
RABIES.—Since the muzzling order came into force in London, just two months ago, 13,608 dogs have found their way into the hands of the police, and of these 10,185 have been destroyed. The number of dogs that proved to be suffering from rabies in the two months was 42.

THE NEW PHOTOGRAPHY.

Two zealous natural scientists, Professors of the Cirencester Agricultural College—Mr. G. Paton and Mr. Cecil C. Duncan—have been working at the new photography, and obtained very interesting results, some of which they have obligingly placed at our disposal. The penetrating Röntgen **X** rays, in their skilful hands, have given skiagraphic pictures of the skeletons of frogs, fishes, and other small animals ; through their covering of flesh and skin. Fractures, other injuries and diseases of bone, have been clearly demonstrated ; portions of needles lodged in the sulci of bones of the hand and arm have been diagnosed and their position localised. More recently the Professors have produced the accompanying admirable print of a horse's pastern and foot. The foot was placed over an ordinary photographic plate, and vertically under the **X** rays of the focus tube ; the coil used was an Apps induction working at a 3-inch spark. After exposure of a few minutes, the plate was developed in the usual way, and presents a distinct picture of the bones, tendons, and ligaments of the pastern, taken, of course, through the hair, skin, and subcutaneous tissues, and of the bones of the foot seen through the solid hoof. There is also observable towards the upper part of the fetlock the fibroid thickening of a sprained tendon.

These are curious and important results, disclosed by these wonderful new processes, concerning which so much has yet to be learned. Of the nature of this new light we are much in the dark. Does it differ from the light with which we had been familiar in consisting mainly of longitudinal, instead of transverse vibrations? Professor Röntgen has demonstrated that it is not refracted by lenses or prisms, and hence cannot be focussed. It is not absorbed or diffused by its passage through air, but it penetrates through an inch deal, through a series of stout sheets of superimposed cardboard, or through many hundred pages of a printed book, as well as through the soft animal tissues.

The practical applications of the new light in the arts, in medicine, and in surgery, cannot at present be fully realised. Processes, however, will be improved. The requisite battery, the powerful induction coil, and the Crooke's tube are at present expensive, and each picture has hitherto cost 20s., but this cost can probably be considerably reduced. With better appliances, and more skill in using them, the failures to obtain good pictures, which most experienced operators have hitherto placed at upwards of a tenth, will be diminished. The requisite period necessary for exposure will probably be materially reduced, a matter of importance in obtaining photographs of the lower animals. Numerous workers at home and abroad, in human, and latterly in comparative and veterinary medicine, are week by week making fresh achievements. Needles, bullets, and other foreign bodies lodged in the tissues have been discovered, and their removal facilitated. Tuberculous disease of bones and joints, ulcers, and other lesions have been identified and successfully treated. Morbid conditions of the urinary bladder both of men and animals have been portrayed. We have not yet heard of the **X** rays being yet used, as they well might be, for the diagnosis of these serious cases of obstruction and displacement of the bowels of horses, or for localising those foreign bodies—hair balls, bones, pieces of leather, needles, or skewers—not infrequently lodged in the digestive track of cattle, and occasionally in that of dogs. The Cirencester professors suggest that in cases of occult spavin of ringbone, or where veterinarians differ as to their opinion of the nature or site of disease, the expert will be called in to elucidate the subject with the new light.



(*a*) Great pastern bone. (*b*) Small pastern bone. (*c*) Coffin. (*d*) Navicular bone. (*e*) Flexor perforans tendon. (*f*) Long inferior sexamoid ligament. (*g*) Extensor pedis tendon. (*x*) Seat of sprain of tendon passing navicular bone.

THE VETERINARY SURGEON AND HIS CLIENT.

BY FALCON.

As buyers and sellers of horses know, warranties, once inseparable incidents to horse-dealing transactions, have now gone entirely out of fashion, and the only wonder is that they lasted so long. They endured for all time, and if a man bought as a three-year-old a horse which became unsound at thirteen, he would win in an action for breach of warranty if he or his advocate, coupled with some good evidence, could induce the jury to believe that the unsoundness existed at the time of sale. Whether the seller knows of the unsoundness or not is immaterial if he give a warranty; when he does so he becomes an insurer. At one period an attempt was made to argue that the paying of what was termed a "sound price"—that is to say, a tolerably high price—was tantamount to a warranty of soundness; but this contention the judges could not stand. Nevertheless, a good many sellers who, in accordance with the then prevailing practice, gave warranties, were very hardly dealt with, and often had to pay damages, when it was more than likely the unsoundness alleged as a breach of warranty was induced by the ill-regulated stable management of the buyer. Without, therefore, going more deeply into the history of warranties, it will suffice to say that it is now quite the exception for one to be asked for or given.

In lieu thereof the custom now is for the intending buyer to have the horse he fancies examined by a veterinary surgeon of his own selection, and to take or refuse the animal according to the terms of the certificate. No human institution is perfect, and under the system a certain number of mistakes occur; but, on the whole, it has been found to work well. It will be at once perceived that the first result is to absolve the seller from responsibility; and, if a dispute should arise—if the horse passed as sound, or practically sound, by a veterinary surgeon, proves to be unsound—it is between the buyer and his professional adviser, instead of, as formerly, between the buyer and seller. The veterinary surgeon is not liable for a mere mistake, and so it has come to pass that "horse causes," those once marvellous opportunities for professional disagreements, have happily become rare; the money wasted on them in years gone by was simply enormous. Nevertheless, we have only to refer to some of the more prominent shows to find out that, under the new order of things, the contradictory opinions of the veterinary officials are as common as they were in the old days when horse causes flourished exceedingly. Horses have been rejected by one veterinary surgeon and passed by another; they have been disqualified at one show and taken a prize at the next. There is frequently the same diversity of opinion in the case of horses bought and sold by private contract. A seller has his horse examined by a veterinary surgeon, and perhaps passed sound; yet, when the buyer's expert comes to overhaul a horse, he perhaps rejects him. At other times the boot is on the other leg, and the buyer finds at last that he has bought an unsound horse, though his professional examiner declared it all right.

This sort of thing, though annoying, cannot be helped, since there are cases in which no two men see a horse with the same eyes—even horse show judges do not. A question, however, of equal importance to a buyer is the construction of the certificate when he has obtained it from his veterinary surgeon. A perfectly sound horse, or, in other words, a legally sound horse, we can hardly expect to find—if he has done any real hard work, for the slightest "structural alteration" is sufficient in the eye of the law to make a horse unsound, though he may be, for practical purposes, as sound as the proverbial bell of brass. Hence the veterinary surgeon notes all shortcomings, and when the buyer comes to read his certificate he finds that a certain bay gelding has a slight inequality in the size of his feet, an incipient splint

on the near fore-leg (in a position in which it is unlikely to cause lameness), a suspicion of coarse hocks, a bursal enlargement, with perhaps several other defects : yet the horse is said to be practically sound. The initiated can, of course, read between the lines, and can, armed with the professional document, estimate the value of a windgall or a splint far removed from a position likely to cause injury. With the inexperienced it is not so easy to come to a conclusion, and then the question arises how far the buyer is justified in asking his veterinary surgeon to tell him whether he had better buy the horse or leave him alone, and how far the veterinary surgeon would be well advised in acceding to the request.

I said just now that the substitution of veterinary certificates for warranties had the result of putting the veterinary surgeon and his client into more or less antagonism in the event of the former making a mistake, or the horse not turning out well. This is, of course, intensified when the veterinary surgeon enlarges his functions to the extent of advising his client to buy or decline any particular horse. Such advice is not quite within the real duties of a veterinary surgeon, who is *functus officio* as soon as he has examined the horse and committed his ideas to paper in the form of a certificate. Nevertheless, any competent advice could not be otherwise than useful to buyers whose experience of horses is not very extensive. The veterinary surgeon, though he may neither be a good horseman nor coachman, will probably be able to make a very good guess whether the defects he has found in the steed which he has examined are likely to develop to an extent which shall impair the animal's usefulness. The veterinary expert can be guided by the age of the horse, whereas a novice would be unable to say whether a certain defect was as important in a horse of mature years as it would be in the case of a four-year-old. Still, it must not be left out of sight that a veterinary surgeon, by doing anything more than giving his certificate, to a certain extent risks his reputation. A horse which might stand sound for years if properly attended to, might become unsound very speedily if subjected to inexperienced management. I remember one case especially which exemplified this. A riding horse was sold with a warranty of soundness—this was many years ago— and soon after the deal the seller was notified that the horse was unsound, the unsoundness consisting of navicular or fever in the feet, I forget which. As the seller declined to take the horse back, the buyer brought an action for breach of warranty, and was represented by counsel who had some knowledge of horses. The defendant and his witnesses stoutly denied the alleged unsoundness, the defendant recounting the long journeys he had made in the saddle, and how the horse had always reached home "as fresh as paint." "You never found it necessary to bandage him, or to take any recuperative measures?" asked the plaintiff's counsel. The defendant denied anything of the kind; he had never bandaged, and never had wanted to do so; nor had he taken any other precautionary measures. Ultimately the jury found for the plaintiff, presumably on the ground that by riding his horse far and fast, and taking no care of him afterwards, the seeds of the disease were laid. This sort of thing is probably the key to many cases of unsoundness, and veterinary surgeons, being acquainted with the fact, are very reasonably rather chary of venturing an opinion as to the expediency of buying a horse.—*Live Stock Journal.*

A DRAFT sale of nineteen Clydesdale horses, comprising six brood mares, eight fillies, and five yearlings, from the Blairtummock Stud, owned by Professor James McCall, F.R.C.V.S., Glasgow, realised close upon £1,000, on Tuesday, 21st April ult., the biggest price being 100 guineas paid by an English breeder for the brood mare, "Flower of Moray," foaled in 1887. The average price realised was £52 3s. 4d.

THE MICRO-ORGANIC LIFE OF WATER.

It is now more than two hundred years ago since the Dutch naturalist, Leeuwenhoeck, discovered the presence of bacteria in the saliva of the mouth. He knew, however, practically nothing with regard to their nature, and it was not till the beginning of the present century that any further light was shed upon the subject, and that Ehrenberg made the first scientific observations, by the aid of the microscope, with regard to their nature and presence in a variety of substances. They were at first called *infusoria*, or infusion animals, under the idea that they were the lowest members of the animal kingdom. Subsequent investigators, notably Schwann and Cagniard La-Tour, further studied these minute forms of life, and showed that they were implicated in the process of the fermentation of wine and beer, &c. It was, however, to the great Frenchman, whose death France still mourns—viz., Louis Pasteur, that we owe the most famous investigations into this world of minute life.

We purpose in this article to draw our readers' attention to the micro-organic life of water, more especially drinking water, as revealed by recent research, and to point out its significance and importance from a sanitary point of view. Before we knew aught with regard to the micro-organic life of water, the belief was common that the most dangerous kind of contamination in a drinking water was *organic matter*. It was thought that this organic matter could become spontaneously fermented, as well as induce fermentation in other organic matter by merely coming in contact with it. Pasteur, however, showed the fallacy of this theory, and pointed out the fact that the reason why organic matter was a dangerous impurity in water was simply because it was apt to be associated with micro-organisms of a disease-producing character; and while we still attach considerable significance to to the presence of organic matter in water, more especially that of animal origin, we do so merely because it furnishes us with presumptive evidence of the presence of what alone is dangerous—viz., the disease germs. The test for organic matter is more easily applied than the test for germ life, which has hardly as yet been developed to such an extent as to permit of very general application. We have, however, devised fairly satisfactory methods for conducting the bacteriological analysis of a water, and before describing some of the results which this method of examination has furnished, it may be well, in a word or two, to describe how it is we are able, not merely to detect the presence of organisms, many of them so minute as to defy ordinary microscopic examination, but actually to estimate, with considerable accuracy, their number.

It is to Dr. Koch that we chiefly owe the ingenious method known as "plate-culture." Like all other forms of life, bacteria need certain food ingredients for their development; and Koch's method was suggested to him by the observation that a slice of cooked potato, if exposed to the air, and preserved at a suitable temperature in a moist place, developed after some time, a number of different coloured patches. A microscopical examination of these patches revealed the interesting fact that each patch consisted of a large number of bacteria of one kind. If, then, a drop of water—which it is desired to test for bacterial life—be introduced into some solid medium, previously rendered absolutely free from bacterial life, and containing suitable food material, the result will be that a rapid development of the organisms present ensues, and very soon in place of each organism, we have what is technically known as a "colony"—since the rigidity of the surrounding medium prevents movement on the part of the organism. The medium used by Koch is gelatine containing nutritive substances. The *modus operandi* consists in introducing a drop of water into a tube containing sterilised (that

is free from micro-organic life) liquid gelatine. The drop of water is then incorporated with the liquid gelatine by quickly rotating the tube, and the whole is poured on a plate, special precautions being taken to prevent contamination. The gelatine soon becomes solid, and forms a thin coating over the plate. In due time the colonies make their appearance, and may be counted. As each colony may be taken to represent each micro-organism in the original liquid, their number is thus inferred. This, however, only gives us, as we have seen, the total number of organisms, and does not enable us to identify their species. To do so we have to make a series of cultivations, the one from the others. In this way we eventually obtain a "pure" cultivation. The identification of the different organisms has been further facilitated by the use of certain staining reagents, and by using separate culture media, since organisms differ in their tastes in this respect.

If a sample of almost any kind of water be examined by the above method, it will be found to contain bacteria in greater or lesser number. Many may remember the alarm with which the inhabitants of a large city in Scotland learned of the presence in their drinking water of minute forms of animal life. It is possible that their feelings might have been more strongly outraged had they known of the huge numbers of microscopic organisms which they swallow in every drop they drink. Indeed, so numerous are they that it is found most convenient to state their number per cubic centimetre—that is, about the one-sixteenth part of a cubic inch. No natural form of water can be said to be free from bacterial life, and this is only what we should expect when we reflect on the well-nigh universal occurrence of bacteria in the air. It was shown, about 25 years ago, by Professor Burdon Saunderson, that even filtered water obtained from the purest ice, as well as distilled water which had been kept some little time, contained bacteria. The waters which are freest from organisms are such forms of meteoric water as ice, snow, hail, and rain. Investigations on the water obtained by melting snow show a variation of from 2,000 to 3,000 bacteria per cubic centimetre. The sample of snow found to be purest in this respect was obtained from a Norwegian glacier some 6,000 feet above sea-level. The water obtained from ice seems to be less pure. Thus the ice taken from Lake Rummelsburg, near the city of Berlin, showed, when examined on different occasions, a number of bacteria varying from 21 to close on 9,000 per cubic centimetre; while in samples of ice used in Berlin, and obtained from other sources, as many as 25,000 have been found. The only sort of ice which seems to be free from them is that made from distilled water. Ice, however, is probably about 90 per cent. purer than the water from which it is taken. It may be added that some interesting investigations were made on hailstones in Russia, which showed that from 279 to 21,000 were present per cubic centimetre.

With regard to rain water, we have not the same number of statistics. It would seem, however, from the few investigations which have been carried out, that it is wonderfully free from this class of impurity. In Paris, rain collected on the outskirts of the town only contained four bacteria per cubic centimetre; while that collected in the middle of the city contained 19.

When we come, however, to other classes of natural water, we have an enormous increase in their bacterial contents. The most elaborate amount of research in this respect has been made on river waters. Thus such rivers as the Thames and the Lea at London, the Seine at Paris, the Dee, the Rhone, the Maine, the Saone, and the Isar at Munich, have all been submitted to a large number of bacteriological analyses. The results obtained show a wide variation in the number of bacteria present. Thus the result of some two years' investigation on the Thames and the Lea by Professor P. F. Frankland showed a variation of from 1,000 to 92,000 for the former, and of from 1,000 to 121,000 for the latter. The months in which both rivers

were purest were the summer months; while January (for the Thames), and December (for the Lea), were the worst months. Dr. Frankland suggests that an explanation of this is to be found in the fact that during the summer months the waters of these two rivers is chiefly derived from springs; while during the winter months a considerable amount of drainage from cultivated lands finds access Into the rivers. London, as all are aware, does not enjoy the best of water supplies. It may be some consolation, however, for the Londoners to know that in this respect they enjoy a purer water than that afforded by the Seine at Paris, in which the numbers range from 6,000 to 153,000. Like the Lea, December is the worst month for the Seine.

When it is stated that as many as 26,000,000 per cubic centimetre have been found in a sample of raw sewage, it may be easily understood how the addition of sewage to a stream should enormously increase their number in its water. This is strikingly brought out in some of the researches of these river waters. Thus the Seine above Paris contained only 300, but below Paris it contained 200,000 per centimetre, that is, an increase of nearly 700-fold. Similarly, the river Isar, above Munich, contained only 531, while below the city it contained 227,369 per cubic centimetre. Lastly, the river Spree showed an increase in its waters of from 1,000 above the city to 2,500,000 per cubic centimetre below the city. In all these cases the increase was due to contamination by sewage matter, which the rivers suffered in their flow through the cities.

Dr. P. F. Frankland, in his recently-issued valuable work, "Micro-Organisms in Water," cites some interesting researches on the river Dee, which illustrate the process of purification taking place in a stream in the course of a few miles flow. Samples of water from over forty miles of the river were examined. That drawn from the river at Braemar was found to contain 88 bacteria; below Old Mar Castle, after the incorporation of the Dee with the river Cluny, the number was increased to 3,000. At Ballater Bridge this number was reduced about one-third, giving evidence of the process of purification which had been going on. Below Ballater it was again tested, when some 3,700 were found; while, lastly, at Kincardine O'Neil, the number was again reduced to 938. In Dr. Frankland's own words—"The river Dee thus affords an example of the repeated pollution and repeated restoration of a river to a state of comparative purity."

The water of lakes seem to be considerably freer than river water from bacterial life; indeed, there seems to be a process of purification going on in lakes, since the water of a lake contains actually fewer bacteria than the streams supplying that lake. The further from shore, the purer is the water likely to be in this respect. It will be of interest to those of our readers who are dwellers in Glasgow to know that the number in Loch Katrine has been found to be 74. In this respect Loch Katrine is purer than the Loch of Lintrathen, which supplies Dundee, which has been found to contain 170. The Lake of Lucerne, in Switzerland, however, is purer than Loch Katrine in this respect, the numbers found there varying from 8 to 51.

Both wells—especially deep wells—and spring waters are comparatively free from bacterial life. Lastly, it may be pointed out that even sea water is not free from bacteria, unless, perhaps, at great distances from land.

A point which the reader will naturally be curious about is the significance, from a health point of view, of these minute denizens of water. Now, even granting that the majority of bacteria found in water may be harmless, nay, more, that they may possibly subserve a useful purpose, the fact nevertheless remains that waters containing a large number of them are likely to contain along with those which are harmless those also of a hurtful kind. That water may be the means of spreading certain diseases, more especially cholera and typhoid fever, abundance of proof is not wanting. It may be safely con-

cluded, therefore, that since our knowledge of disease-producing germs, and our ability to detect them, are as yet limited, the mere presence of large numbers of bacteria in a water lays it open to suspicion. It is hence of interest to see how far such common methods for effecting its purification, as filtration through various substances, remove bacteria.

It has been long known that most substances used for this purpose do little for a water beyond removing matter in suspension. Some kind of filters, however, such as bone charcoal, are capable of doing much to remove organic matter in solution. It is interesting to find, however, that a large number of the filters in common use have a most important effect on the bacteria in water. Sand, for example, which does little more than remove matter in suspension, under favourable conditions effects the purification of water from bacterial life to the extent of from 93 to 99 per cent. Of course this is only when filtration is carried on under the most suitable conditions. There must be a sufficiently thick layer of sand, and the rate of filtration must be sufficiently slow to permit of the sand exercising its full effect as a purifier. There is a condition which is still more important, and one which will no doubt strike the reader as at first sight a somewhat unexpected one. New sand filters do not exert the same influence as those which have been in use for some time, in effecting the removal of bacteria. This is due to the formation of a slimy growth which covers the surface layer of the filter. Until the filter has developed on its surface this slimy growth, it possesses little power to remove micro-organic life from the water filtered through it. Such filters as animal and vegetable charcoal, spongy iron and coke, are also most effective in removing bacteria. Indeed, under favourable conditions, complete removal of them may be effected. It is noteworthy that in this respect vegetable charcoal is quite as efficient as animal charcoal. This is all the more striking since, as we have indicated, vegetable charcoal does not possess the power that animal charcoal has of removing the organic matter dissolved in the water. A substance which has been also shown to be very effective in this respect is biscuit porcelain. The habit of collecting drinking water in large reservoirs, where it is allowed to settle for some time before being drawn off for use, exercises a very beneficial effect, in considerably reducing the number of bacteria, which, under such cirumstances, subside.

Filtration, then, will be seen to be a most important precaution; and it seems only right to infer that any disease-producing organisms present in a water would be removed by its means. Indeed, it may be boldly stated that this fact has been proved on more occasions than one. Perhaps the most striking demonstration of its truth was afforded by the cholera epidemic in Hamburg in 1892, where the adjoining town of Altona suffered to a much less extent than Hamburg itself, the death-rate in the former town being only 221 per 100,000, while that in the latter was six times as great. So far as the water supplied to the two towns was concerned, Hamburg was much better off that Altona, since, although both towns drew their drinking supply from the river Elbe, the intake for Hamburg was above the town, whereas the intake for Altona was below it, and after the river had received the sewage of Hamburg. The true reason of the comparative immunity enjoyed by Altona was due to the fact that the precaution of submitting the water to filtration was taken before drinking it. In Hamburg no such precaution was adopted.

In conclusion, lest the above remarks should have the effect of unnecessarily alarming many people, it may be added that wherever any suspicion exists as to the quality of a water, a safe and effective precautionary measure is to submit it to boiling, since the boiling temperature is sufficient to kill such disease-producing germs as it is likely to contain. Certainly such a precaution would not be wasted with most of the drinking waters of Continental towns.

C. M. A.

THE OUTBREAK OF GLANDERS IN LIVERPOOL.

A very serious problem.

THE outbreak of glanders in Liverpool is a very serious matter, and is engaging the unremitting and anxious attention of Mr. Reynolds, the Corporation veterinary surgeon. Three distinct stables have, up to now, been affected, and it has been found necessary to destroy eleven horses. Once the disease has definitely declared itself, there is practically no remedy, the knacker's yard being the sole resource left. It is easy to see, therefore, that if glanders attacked horses on any large scale the prospect would be very alarming, as well as very costly. In the interest of hygiene the Health Committee would be compelled to destroy forthwith all horses which were properly certified to be suffering from glanders. The compensation to the owners from the local authority is considerable, and cannot but be of advantage to the owners of horse flesh. The rate of compensation is one-fourth of the value of the animal prior to the attack. As a glandered horse is worthless, the owner is to that extent the gainer. The disease, however, is so terrible and far-reaching—dangerous alike to men and animals—that no authority which has the health of the community at heart would hesitate at a larger sum if that were required.

Regrettable and inexplicable as it may seem, the law regulating the stamping out of this disease is most inefficient and ridiculously inadequate. For instance, the Corporation might find itself compelled to spend some £5,000 or £10,000 in an acute outbreak of this type, yet the whole effect of these valuable precautionary measures might be rendered absolutely nugatory by the importation or visit of a diseased horse from the outlying district. This results from the conflict of jurisdiction between the counties and the boroughs. If the Corporation moves and stamps out disease with a heavy hand, the County Council may remain apathetic or take a different view of the question, and thus it may come about that a farmer's horse coming into the city may drink at a public trough, and spread the disease as far as ever. The common trough, so much in vogue by humanitarians as a kindness to animals, is often the channel through which contagious disease is spread. It is particularly so with respect to glanders. The only remedy—if it can be called such—for glanders is an injection of "Mallein," which is used, in the first instance, to determine whether an animal is affected by the disease. This has to some extent been experimented with in Liverpool, but so far experts regard its efficacy with some dubiety. It would be perhaps more accurate to describe their position as that of a barrister with a "watching brief." Mallein was discovered and made by a Russian veterinary surgeon named Kalming, the idea being suggested by Koch's application of tuberculin in cases of tuberculosis. The seat of glanders, which is to some extent a misnomer, is in the lungs, and horses in a debilitated condition from any cause are the victims. Strong horses appear to be able to resist the germs by the good state of their constitution alone, but if they happen to come in contact with a "rubbing-post"—*a la* Duke of Argyll—or any object touched by a glandered horse, the effect upon a wound, however slight, is almost certain to be followed by communication of the deadly virus. The human subject is similarly affected, and the results are terrible, and almost always fatal. It is little wonder, then, that the veterinary department of the Corporation is just now exceedingly active, or that the Health Committee looks with something like alarm at the spread of the disease, and is concerned for the comparative powerlessness of the machinery with which it is equipped, or rather at the ease with which all its efforts may be rendered absolutely futile by a chance visit of an animal from beyond its boundaries. The extirpation of the disease should depend upon an Imperial enactment, and some effort in that direction will be shortly made.—*Liverpool Daily Post*, April 11th.

AN ABLE ADMINISTRATOR.

In Memoriam.

THE late Principal Veterinary Surgeon James Collins was born November 14th, 1830. He joined the 6th Inniskilling Dragoons as veterinary surgeon June 23rd, 1854. He was promoted 1st class veterinary surgeon July 29th, 1862; inspecting veterinary surgeon, Bombay Presidency, October, 1866; appointed staff veterinary surgeon, Curragh Camp, November, 1871; and to Dublin in 1873. He remained in Ireland until 1876, where he specially distinguished himself in dealing with outbreaks of glanders, for which he was highly commended by H.R.H. the Commander-in-Chief, and by General Sir John Michael, the Commander of the Forces in Ireland. He was promoted Principal Veterinary Surgeon of the Army, June 28th, 1876, and he retired in his fifty-third year on completion of the prescribed seven years' tenure of office. He served in the Crimea with the Inniskilling Dragoons and other corps from July, 1854, until July, 1856, and was present at the battles of Balaclava, Inkerman, and siege of Sebastopol (medal with three clasps and the Turkish medal). He proceeded to India in September, 1858, and served in that country until 1870, where he did excellent work, and after only twelve years' service was promoted to be Staff Veterinary Surgeon of the Bombay Presidency, thus early making his mark.

Immediately on appointment as Principal Veterinary Surgeon, he applied for the removal of his office from Woolwich, where it was almost lost, to Headquarters, London, which was eventually granted. As Principal Veterinary Surgeon he, in 1878, started the idea of instituting the Aldershot Veterinary School for the instruction of officers and farrier sergeants and shoeing smiths. It was eventually approved of by the authorities and established, and opened on June 1, 1880, the present Director-General of the Department being the first professor. Principal Veterinary Surgeon Collins drew up a very successful scheme for this school, and the lines laid down by him are still in a great measure in force. He attended the opening of the school, and took very great interest in it during the remainder of his term of office, which did not expire until he had seen the institution firmly and successfully established. Long before the Veterinary School was established he had classes formed at Woolwich, for the instruction of farrier sergeants and shoeing smiths of the Royal Artillery, by veterinary officers at Woolwich.

It may here be observed that the Aldershot Army Veterinary School has proved of the greatest benefit to the service. One of the first things Principal Veterinary Surgeon Collins did after his appointment, was to obtain a new Royal Warrant, increasing the pay and pensions of the officers of the Army Veterinary Department, for which they were deeply grateful to him. He then, ever studious of the welfare of others and of the Service, found that several veterinary officers held appointments for an indefinite period at home to the detriment of others, who were therefore obliged to proceed to India after being only a short time at home, a very unjust state of affairs. But as veterinary officers were then permanently gazetted to regiments, they could not be moved; however, Principal Veterinary Surgeon Collins was equal to the occasion, and submitted an admirable scheme, which was approved and adopted, placing them all in one list, thus forming the Army Veterinary Department. This list enabled him to make a foreign service roster, in which all took their fair turn of service both abroad and at home, and besides, this unification removed from veterinary officers the heavy pecuniary charges to which they had been subjected while belonging to corps, besides giving them certain allowances which they did not formerly receive. This unification scheme has proved of the greatest benefit in the working of the department.

In 1878 Principal Veterinary Surgeon Collins was successful in obtaining

the extension of the Good Service rewards to the department, Inspecting Veterinary Surgeon T. P. Gudgin being the first recipient. In 1880 Principal Veterinary Surgeon Collins was successful in obtaining an extra grant per diem to veterinary officers in sole veterinary charge in any colony, and also of extra pay to the chief veterinary officer in the field. In 1880 he also succeeded in obtaining promotions for distinguished services for the department, which had not before been conceded. In 1881 he instituted the annual "Veterinary Statistical Return for the Army," a most valuable publication, which is, of course, still continued. Finding the old veterinary regulations would not meet requirements, especially as regards sanitation, stable management, and the method of dealing with glanders or farcy, and other contagious diseases, he compiled the new edition of 1882, fully dealing with all the above, these regulations being so excellent that they remained in force until 1894, when a new edition appeared, in which they are practically republished. But long before the 1882 edition was published, he had issued orders which firmly established the sanitary regulations which are still so successfully in force in the mounted branches of the Army. In 1882, the Companionship of the Bath was first conferred on an officer of the Army Veterinary Department; now the officers of the Army Veterinary Department are on the same footing as all other military officers for decorations. In 1883, he got an increased step of rank to the then so-called inspecting veterinary surgeons, and to the then so-called veterinary surgeons, 1st class, after ten years' service in that grade.

The last great boon that Principal Veterinary Surgeon Collins conferred on all veterinary officers was in obtaining the right of presentation at Court, which had been before denied them. This was in June, 1883, and he was the first veterinary officer regularly presented. For these services the Good Service reward was at retirement conferred on him by Her Majesty.

From the above it will be seen what great service Principal Veterinary Surgeon Collins rendered to his department. He it was who placed it on its present sound basis, and laid down the admirable sanitary principles on which it is still conducted, and who made the task of his successor comparatively easy. He was a man of firm will with great determination, which made him succeed in most of what he undertook. He was a strict disciplinarian, but always willing to give a helping hand to the deserving. He was straightforward and impartial, and he will ever be kindly remembered by those who had the privilege of serving under him.—*Army and Navy Gazette.*

Parliamentary Intelligence.

TUBERCULOSIS.

Another Commission to be Appointed.

Mr. Crawley asked the President of the Local Government Board whether, in view of the fact brought to light by the Royal Commission on Tuberculosis, that so many cows suffering from tuberculosis are giving milk which is supplied to consumers, and that the milk from these cows is dangerous to the health of human beings, he is prepared to institute some system by which all cows whose milk is sold for public consumption shall be placed under compulsory inspection.

Mr. Chaplin: While the report of the Commission of 1895 has dealt fully with the scientific aspects of the matter referred to, no report has been made on the administrative procedure necessary to give effect to the conclusion of the Commission. The Government have, therefore, assented to the proposal that a Royal Commission be appointed to consider and report further on

these matters. Legislation would be necessary to enable me to order an inspection of all cows whose milk is sold for public consumption, and I think it should be postponed pending the inquiry which has been determined upon. It is, however, to be gathered from the report already issued, that by a very simple process—namely, boiling the milk, absolute immunity from infection can be secured for the consumer.

Dr. FARQUHARSON: Is it not the fact that tuberculosis cannot be spread through milk unless there was a disease in the udder of the cow, and under those circumstances would not inspection be both an easy and effectual preventive? I would also ask whether without such inspection during the possibly long time before the new Commission can report many lives may be lost?

The SPEAKER: I think the hon. member should give notice of that question.

Mr. CHAPLIN: I will answer the question now; indeed it is already answered by what I have said. Legislation would be necessary to give me the power of compulsory inspection. I have no doubt there is a good deal in what the hon. member has said, but I could not do it without further legislation, which would be impossible this session.

Obituary.

MR. JOHN CHAPMAN, who, with his father, was practically the maker of the famous Trent Bridge ground, and who, in the early forties, was one of the mainstays of the Nottingham County Eleven, had died (says the *Globe*) at Gainsborough, where for fifty years he had been in practice as a veterinary surgeon. As a cricketer, Mr. Chapman was contemporary with those giants of the game, Alfred Mynn and Fuller Pilch. In 1844, playing for Notts against the Gentlemen of England, he bowled both Mynn and Pilch first ball, the latter having scored fifty when he was put on to bowl. Mr. Chapman bowled against England for Notts in 1847, and in the many important matches in which he took part he was a very consistent scorer. It was only the other day, at the County Club dinner, that Dean Hole made a reference to Mr. Chapman's skill at the game. The deceased was 82 years of age.

MR. J. D. BARFORD, J.P., died at his residence at Portswood, Southampton, last week. He was well known as a veterinary surgeon of large experience, having been partner with the late Mr. W. C. Spooner, and his successor in the business. During the frequent visits of the Royal Counties Agricultural Society to Southampton, and of the single visit, in 1868, of the Bath and West of England Society, he was an active member of the local committee, and also occasionally acted in the capacity of Joint Secretary. He was an inspector under the Privy Council at Southampton under the Foreign Animals Act. As a member of the Botley and South Hants Farmers' Club he was a constant attendant at the club meetings, and, as the printed reports of the proceedings show, was a frequent and valued contributor to the debates. He was in his 68th year.

G. H. Pemberton, Stainton, Gloucestershire	.. ..	Apl.. 1864
R. Margrave, Swansea, Glamorganshire ..	.. ..	May, 1894
Alex. Marking, Sudbury, Suffolk	.. ..	Apl., 1869
Geo. Harris, Sawbridge, Herts	.. ..	Apl., 1847
J. Chapman, Gainsboro', Lincolnshire ..	.. ..	Nov., 1833
J. D. Barford, Southampton	Feb., 1886,	May, 1849

Legal News.

THE FATE OF SOME OLD HORSES.

At Thames Police Court, on Saturday, April 11th, William Almond, 22, was charged with cruelty to a horse. Inspector William Rogers, of the Royal Society for the Prevention of Cruelty to Animals, stated that about nine o'clock on Friday night, while on duty in Naval Row, Poplar, he saw the defendant leading two horses towards the docks. One of the animals, a black gelding, was very lame on the off fore-leg, owing to a diseased limb. There was a poultice on the foot, and the animal had been badly shod with a bar shoe. It was an aged horse. He asked the defendant how far he had come, and Almond replied, "A man asked me to lead it from Barbican to the docks to be shipped for Rotterdam." It being, in witness's opinion, an act of cruelty to lead the animal when in such a condition, he gave the defendant into custody. Inspector Clarke, of the Royal Society, first drew his attention to the case, but he had been so seriously assaulted by a number of men that he was unable to be present. Mr. F. W. Kendall, veterinary surgeon, corroborated the inspector's evidence. Mr. Mead: Where were the horses going? Mr. Kendall: To Rotterdam. Mr. Mead: For what purpose? Mr. Kendall: To be slaughtered for human food, I believe. The commercial value of the horse in question over there would be £7 or £8, but here it would only be worth about 35s. The defendant called Alexander M'Donald, a general dealer of Stephenson Street, Canning Town, who, in reply to the magistrate, said he bought three horses. One was too lame to walk, but he thought the other two were capable of walking as far as the pier. He engaged the defendant to lead the horses, and paid him 1s. 6d. for each horse. He was going to send them to Rotterdam. The inspector, recalled, said he had been engaged in similar prosecutions, and by direction of the Society was engaged on special duty with regard to these cases. Mr. Mead fined the defendant 10s. or seven days. Inspector Rogers then applied for a summons against M'Donald, which was granted and made returnable at once. The case having been proved, Mr. Kendall, in reply to Mr. Mead, said the horses were very roughly packed on board, and it was cheaper to send them living than dead. Mr. Mead said if these cases of gross cruelty continued the magistrates at that court would have to consider whether persons charged should not be sent to prison without the option of a fine, but as that course had not hitherto been adopted, he would not initiate the treatment. The defendant would be fined £4 and £1 4s. 6d. costs, or one month's hard labour.—*Times.*

Extracts from Foreign Journals.

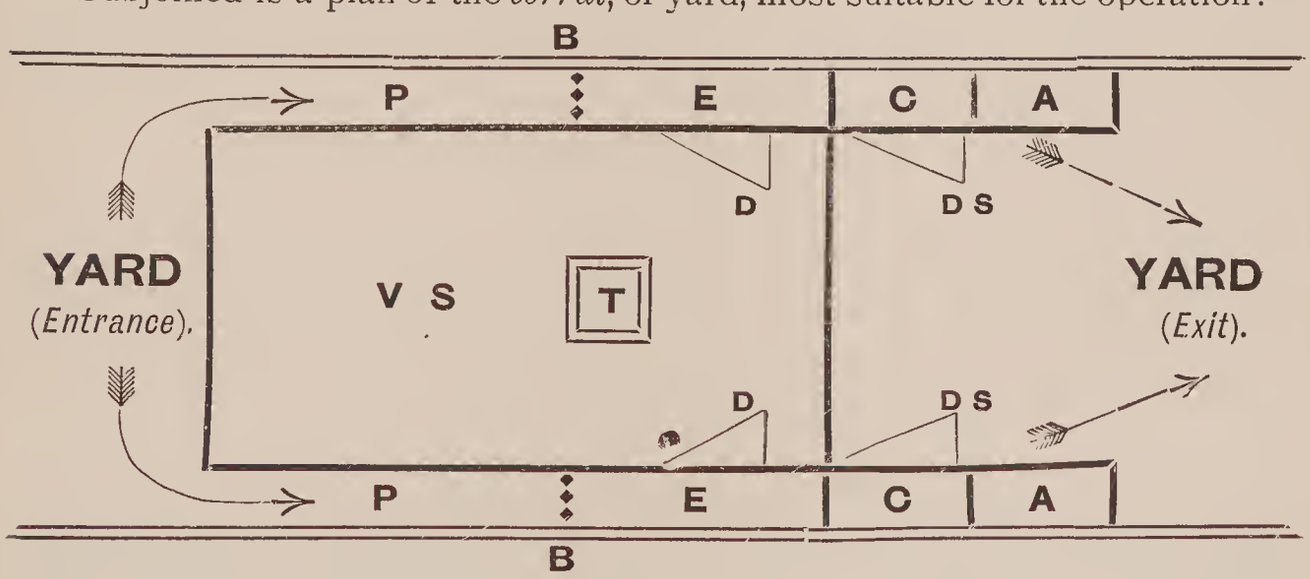
THE SPAYING OF COWS IN ARGENTINA.

In the November number of the Veterinary Journal, we gave our readers a translation of an interesting article on this subject, taken from the *Revista Veterinaria* of Buenos Aires. We wrote to the editor of that paper asking him for further details, and he has very courteously supplied us with the following. He informs us that the operation is carried on in Argentina on a very large scale, no fewer than 25,000 animals being destined thereto this summer in the provinces of Santa Fé and Córdoba. Señor Even says:—"Spaying is an operation which has been practised in Argentina for a good many years back. At first it was thought by many veterinarians that it would not succeed on account of the difficulties to be encountered in the treatment of wild and fierce cattle like ours, but the experience gradually acquired, the discovery that animals reared in the open-air and subjected to all kinds of

climatic conditions showed extraordinary hardihood under the operation, the fact that there is an almost complete absence of infectious germs in our air and in the soil of those immense plains on which our herds pasture, all these tended to prove that the spaying of cows is of great utility, easy in execution, and, I may say, enormously profitable. It is interesting to note that the first attempts at this operation were made by an English veterinary surgeon, who resided some years in this country. He used to perform through the flank, following the same method as in the spaying of sows, but many of his patients died, others took a long time to recover. He could operate on only a very few animals each day, and he required a large number of assistants. In short, by following this plan, instead of the profitable results so greatly desired serious losses were caused to stock-owners, and the operation was abandoned for the time. My distinguished colleague, Enrique Rucq, of Santa Fé, thought, however, that the operation might be successfully and profitably performed, and he proceeded to experiment by removing the ovaries through the vagina, employing a plan somewhat similar to Colin's, but modified and adapted to the special conditions of the place. Señor Rucq has promised to send an account of his manner of proceeding for publication in this Review, but he is unwell at present and unable to fulfil his promise.

"Spaying is performed in summer after calving, and the most suitable months are December, January, February and March. The cows intended for fattening are set apart, or rather the bulls are withdrawn from the cattle-sheds, some time before calving begins. Señor Rucq has, however, demonstrated that there is no danger in spaying a pregnant cow, and such animals, after undergoing the operation, give birth to their calves with perfect regularity and without danger. As a result of this, the segregation of cows for fattening becomes a much easier matter, as it does not signify whether the animal is in calf or not.

"Subjoined is a plan of the *corral*, or yard, most suitable for the operation:—



The animals to be operated on enter at the left, and are driven by mounted *peons*, or herdsmen, in single file along the narrow passages P, formed by a stockade. At B is a barrier, which is closed as soon as one cow has passed it; the cow then passes into the space C, where she is fixed by two bars which are passed across her shoulders and her haunches, two others which support her abdomen and her breast, and a fifth which is passed through behind her, just above the hocks. Her head is also fastened to a bar in front of her, by means of a rope fitted for the purpose and running along the bar. When she is fixed in this position the operation can be performed quite easily and safely. The surgeon who, with his assistant, has been waiting in the space VS, takes his instruments from the table T, opens the door D and steps into the empty space E behind the cow. Another assistant stands in the enclosed space A,

to fasten and unfasten the cow. When the operation is over, he opens the door DS and lets the cow escape. The *corral* with double passages saves time, as one cow is being tied up while the other is being operated on, and *vice versâ*.

"The operation is thus performed: (*a*) The surgeon, as I have said, opens his door D and enters the empty space E behind the cow which is secured, as explained, in C; he brings with him his instruments, which are left between each operation in a solution of lysol or creolin on the table T; (*b*) He introduces into the vagina of the cow a Charlier vaginal dilator; (*c*) He next introduces his hand, armed with a Colin bistouri, having the blade concealed and the runner much smaller than that of the instrument commonly sold and used. The incision is made in the upper and posterior part of the vagina above the cervix, and it extends two to three centimetres (say $\frac{3}{4}$ to 1 inch) from the back forwards; (*d*) When once the incision has been made, the hand holding the bistouri is withdrawn, and so is likewise the vaginal dilator. Then the hand alone—right or left, as may be most convenient to the operator—is once more introduced into the vagina, with the fingers close together, and, enlarging by dilaceration the opening already made by the incision, enters the abdominal cavity below the rectum, and by a movement to the left and to the right, catches hold, one after the other, of the ovaries; these the hand finds quite easily after a little practice; (*e*) When once the ovary has been grasped, one hand, which has remained free outside, introduces the *écraseur* along the other hand and arm, sliding it down the arm till it reaches the fingers. The chain of the *écraseur* is at once fixed on the ovary by the fingers, which have sought it out and grasped it; the hand which remains outside at once brings the chain into play, and the cutting of the ovary is rapidly performed. The excised ovary falls into the hand of the operator, who, by a rapid movement, lets it fall into the vagina; the other ovary is treated in the same fashion. On withdrawing the hand containing the second ovary, the first is picked up in the vagina, and the two are brought outside together. The operation is now finished, and has occupied only some three to four minutes. With a little practice a surgeon can spay 100 to 150 cows per day."

TOXICÆMIA (BLOOD-POISONING) IN ANIMALS CAUSED BY OVER-DRIVING.

Whilst a herd of some 150 head of cattle, that had just arrived from Buenos Aires, after a fatiguing and exhausting voyage, were being driven through Paris, a considerable number of them ran off, frightened by the shouts and yells of the drivers. Five of the animals ran on till their strength was worn out and they fell dead. Two hours after death an experiment was made by taking blood from the necks of these animals, which were cut. A quantity of this blood—which was dark and thick, but regained, when exposed to the air, its redness, and coagulated very rapidly—was filled into sterilised *éprouvettes*. On the opening of the carcases the surgeons were struck by the extraordinary stiffness of the limbs. The liver was quite filled with blood, and the other organs were normal; the muscles showed a reddish-brown colouring, especially in the upper part of the thigh; a cross-cut through the muscles assumed after a short time, a salmon colour. In the blood, which was examined without delay, no pathogenic micro-organisms were found. It was subsequently concluded that the cattle had died of toxicæmia, or blood-poisoning, caused by want of food and over-driving. This assumption was verified by the toxic effect of the blood. Two oldish and one young rabbit died within a few hours after an intravenous injection of one cubic centimètre of serum taken from the blood of the dead cattle. Rabbits of the same size, subjected to the same treatment with blood-serum from healthy cattle, remained unaffected. In view of these facts, one is justified in believing that the use of the flesh of over-driven animals is likely to be attended with serious consequences.—(*Oesterr. Monatsschrift.*)

Notes and News.

ANOTHER STEP IN THE NEW PHOTOGRAPHY.—We have this week received information of a development in the new photographic process which promises to be of great importance in regard to its application to medicine. The improvement consists essentially in very materially reducing the exposure, so that in the case of hands and feet, &c., a few seconds suffice to give satisfactory detail. We have seen some good negatives so obtained with an exposure of less than twenty seconds. The results are obtained by placing the negative (film side) upon powdered fluorspar. It is evident in this case that the active rays are transmitted through the glass. The process gives promise of enabling us to obtain photographic images of objects within the human body with a comparatively short exposure, say five to ten minutes. —*The Lancet.*

THE imports of horses continue to increase, and during the quarter ended March 31st they numbered 9,210, against 4,353 last year. Of the number imported this year, 6,320 came from the United States, against 2,904 last year; 791 from Canada, against 2; and 2,099 from other countries, against 1,447. The value of the horses imported this year was £240,540, against £131,939, the average value being a little over £26, showing that horses of an improved class are being imported. But when we turn to the exports we find some figures which must excite comment and action. There were 6,334 horses exported, against 3,755, and of these 1,624 went to Holland, 3,440 to Belgium, 673 to France, and 597 to other countries. The value of the exported horses was £113,899, against £74,414 last year, the average being only about £18. Examining the figures more closely, it appears that the average price of the horses exported to France was £53 per head, and of those exported to "other countries" the average price was £44 per head. These are perfectly satisfactory figures, and show that so far, at least, the right kind of export trade has not wholly disappeared. But the value of the horses sent to Holland was only £9, and to Belgium £10. Now, what description of animals can be bought for exportation at £10, and what purpose are they intended to serve? In some cases they would appear to be meant for the knackers. There have recently been police-court proceedings, and revolting statements have also been published as to horses being sent to feed leeches, which seem to throw some light on the subject. The statistics afford materials on which the R.S.P.C.A. should be able to set to work with some good results. This is a kind of export trade that ought to be closely scrutinised and suppressed.

Correspondence.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—The report in your issue of last month, of the proceedings of the meeting held by the Border Counties Veterinary Medical Society, at Penrith, on the 13th March ult., furnished some information on a subject that at first glance seemed more within the province of a farrier's work, than that of the veterinary surgeon, but on a more careful consideration of the remarks, and opinions advanced by Mr. H. Thompson, Aspatria, the importance of the subject he had introduced for discussion became at once apparent, the more so, that an important legal decision, as we are led to infer from his statements (as reported) has hinged on the question referred to, viz., should the nails in a horse's shoe be driven in a vertical, or in an oblique, or slanting, direction. It would appear that an unfortunate shoeing smith, dragged into law, whose case induced Mr. Thompson to ventilate this point at the Society meeting, was mulcted in heavy damages for applying a shoe, the nails of which inclined inwards, although no injury to the foot or lameness could be

detected when the pony was examined by Mr. Thompson, on the day previous to the trial; he finding, however, "bony enlargements, and partial low ringbone on the inside of both pastern joints."

In my opinion, there was a gross miscarriage of justice, if the judgment was founded on a shoe in which the nails pointed in an oblique direction, that was produced in court for the opinion of the expert witnesses on both sides.

I consider that Mr. Thompson has done a service to the veterinary profession, by bringing this question as to the angle of the shoe nails in the horny box of the foot, to its notice.

When a writer on horse shoeing states that the nails which fix the shoe to a horse's foot are to be driven vertically, he betrays an amazing want of practical knowledge. Another writes of driving nails obliquely outwards. One other authority propounds, that the nails should be nearly vertical, inclining slightly inwatds. Amid this extraordinary jumble of ideas, it is not surprising that the legal mind of the most astute judge should become confused and misled, when consulting the writing of these authorities, and that the innocent should suffer in consequence. My friend Mr. Thompson, has "hit the right nail on the head," although I do not agree with him that for one vertically driven nail, there are 99 driven obliquely. Let us study the conformation of the perfectly-formed fore foot, prepared for the application of the shoe, and also the hind foot, alike perfect and prepared. The angle from the coronet to the toe of the foot will be found to be about 45 degrees, and the corresponding angle of the hind foot about 50 degrees, which angles gradually become less acute, from toe to quarter and heel. The foot being taken up, the shoe applied, and a nail driven vertically through the nail hole near the toe, punched, as all the nails should be, about a quarter of an inch from the outer rim of the shoe, where would it emerge? Not about an inch or so upwards from the edge of the horny wall, but immediately above the shoe, giving no secure grip. The skilful farrier, however, punches the nail holes of the toe so as to give the nails an inward bias, say an angle of 60 degrees in a fore foot, and they are thus driven inwards, and upwards, in a line with the horny angle, emerging partly by means of the bevel on the nail point, which faces towards the sensitive foot, at the position on the crust of the foot, giving the hold necessary for the retention of the shoe, when it is subjected to the strains and concussion of any kind of work a horse may perform. Now, this principle of driving nails inwards and in line with the angle of the crust, must of necessity be applied to a lesser extent as the heels are approached, and in many feet, more especially on the inner aspect of the hind feet, the nails must be driven quite vertically, and the nail holes punched accordingly.

The diversity of form in the feet of horses so frequently met with, resulting from disease or bad shoeing, renders it impossible to lay down a hard and fast rule how they should be shod, but with the shape and weight of shoe that is in common use in this country, it is beyond the shadow of a doubt that horses possessing sound and naturally formed feet must have their iron protections secured on them on the principles above detailed.

Edinburgh. PETER MOIR, M.R.C.V.S.

Communications, Books, Journals, etc., Received.

Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); Bulletin de la Société Centrale de Médecine Vétérinaire (1er trimestre 1896: Paris); Le Bulletin Vétérinaire (Orleans); L'Echo Vétérinaire (Liége); Annales de Médecine Vétérinaire (Brussels); Berliner Thierärztliche Wochenschrift (Berlin): La Clinica Veterinaria (Milan); Il Nuovo Ercolani (Pisa); La Revista Veterinaria (Buenos Aires); La Presse Médicale Belge (Brussels); Revue Médicale de l'Est (Nancy and Paris), etc., etc.

THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

JUNE, 1896.

ON THE TRANSLUCENT TUBERCLES OF THE LUNG IN GLANDERED HORSES.

AN EXPERIMENTAL STUDY BY ED. NOCARD, OF THE VETERINARY COLLEGE, ALFORT.

[We make no apology to our readers for giving them a full translation of the following paper, read by M. Nocard before the Société Centrale de Médecine Vétérinaire in Paris. It has already been translated into German and Italian, and is regarded by Continental surgeons as of extreme importance.]

THE tubercle of glanders is anatomically characterised by a rounded nodule of the size of a millet-seed, sometimes of a hemp-seed, and even sometimes of a small pea. When we pass our hands over the surface of a glandered lung, we experience a sensation as of small, hard bodies, something like small-shot, encased under the pleura or in the thickness of the lung-tissue. The appearance of the tubercle varies according to age; at the very beginning it is a little rounded mass, of yellow, grey or pink colour, semi-transparent, easily giving way under pressure, homogeneous throughout, without central softening and without thickening of the tissue in its periphery. We might describe it as a little fleshy cicatricle of recent formation; it has the consistency and the special transparency of such cicatricles, it has also their structure, and is, like them, essentially composed of a mass of leucocytes, which indicate their full vitality by their reaction to colouring matter. At a later period we perceive in the centre of the mass a little opaque, white point, indicating the mortification of the cells, and their caseous transformation. This opaque point increases gradually in extent; at first it is tolerably firm, and is surrounded by a thick layer of tissue, which has preserved its original transparency, but gradually it slackens in proportion as the layer

which imprisons it becomes smaller and denser, and undergoes fibrous transformation.

If we examine carefully the lungs of a horse that has been slaughtered as suffering from chronic glanders, we always find in them tubercles of these different types. When we subject to the mallein-test all the stable-companions of a glandered horse, we nearly always find that a certain number of them, though healthy in appearance, show the characteristic reaction ; if we slaughter these, we find in their lungs miliary tubercles in varying number, many of them having the translucent appearance which characterises the first stage in the evolution of the tubercle ; in some of these horses we may find only a small number of these translucent tubercles, nay more, if the stable has been a long time infected, we may even find at our *post-mortem* similar tubercles in horses which did not react to the mallein.

Again, if we inoculate a guinea-pig or an ass with translucent tubercles, even when these are taken from the lungs of a clinically-glandered horse, the inoculation generally remains without effect ; likewise, we can generally obtain *no cultures* of these tubercles, even when we select the most suitable medium for the glanders-bacillus.

This body of facts goes to explain the keen disputes that have arisen with regard to the significance which we ought to attach to the translucent tubercles. I myself have more than once endeavoured to show that these tubercles are really of a glanderous nature. Then all, or nearly all, the standard writers have described them as being the first stage of glanders-tubercle ; I may name Reynal, Trasbot, Zundel, Leisering, Röll, Rabe, Ravitsch, Kitt, Dieckerhoff, Friedberger, and Fröhner. We find them always, when we search carefully, in the midst of caseous nodules, whose glanderous origin is not disputed. We observe them only in horses coming from infected centres. On the other hand, if inoculation and culture *commonly* give no results, it is not *always* so ; I have heard of cases in which others than myself have obtained typical and virulent cultures. Now I will explain why attempts at inoculation and cultures succeed so seldom. The tubercle is translucent as long as the cells accumulated round the bacillus remain living, and they can only remain living if they have been successful in the fight they have waged against the bacillus ; in this case the tubercle retains for a long time its initial aspect, afterwards it undergoes fibrous transformation, and at length, owing to the progress of the cicatricial contraction, it disappears altogether. On

the other hand, the triumph of the bacillus brings about the mortification and caseation of the cells which are in contact with it, and which are the first to undergo the deadly influence of the toxines which it elaborates ; this explains the opaque white point which forms in the centre of the tubercle, and gradually increases in size just in proportion as the bacilli multiply in the midst of the cellular débris. After this it is easy to understand why the inoculation and the culture of translucent tubercles generally give no result, and why also horses, having such tubercles in their lungs, may not re-act to mallein ; it is because the tubercles are no longer virulent, contain no longer living bacilli. This interpretation is correct, in absolute conformity with what is known of the relations between the cells and the microbes, or their toxines ; I admit, however, that it is a little too theoretical, and I can quite understand that it may sometimes have left doubts in the minds of practitioners who have not made a profound study of these difficult subjects. I adduce to-day arguments which, I hope, will remove all doubts.

If I were to succeed in producing experimentally in sound horses pulmonary lesions identical with those of natural glanders, and more especially translucent tubercles, surely no one would dispute any longer the glanderous origin of these tubercles. This is what I have endeavoured to do, but it is not easy to bring about the formation of *miliary* tubercles analogous to those of chronic glanders ; inoculation by pricking or scarification, by subcutaneous, intravenous, or tracheal injection, pulverisation in the trachea, all succeed in making the animal on which we are experimenting glanderous, but if we find at the *post-mortem* of this animal the lungs full of glanderous lesions, these lesions are not miliary tubercles, but simply more or less extensive infarctions, foci, generally limited, of pneumonia or of glanderous broncho-pneumonia, more or less analogous to the well-known lesions which we find in the ass after inoculation with a glanderous product.

I was a trifle discouraged by the ill success of my efforts, when all at once I obtained on one of my experimental subjects the miliary eruption which I had so long been seeking for in vain. The subject was a mule to which I had administered a small quantity of virulent glanders-culture in the centre of a carrot. The lungs of this animal were quite crammed with miliary tubercles at all stages of their evolution ; one might observe especially a great quantity of translucent tubercles absolutely identical with those which we

find, sometimes singly, sometimes in small quantities at the *post-mortems* of contaminated horses which, without presenting any symptoms of glanders, have yet reacted to mallein. I confess that this unexpected result gave me immense satisfaction ; it was only as a forlorn hope and to satisfy my conscience that I had tried the experiment. I did not believe in the contagion of glanders through the digestive tract : what we know of the glanders bacillus, its fragility and liability to destruction, made me think it very improbable that it would resist the action of the digestive juices. Still, so early as 1854, Renault declared that he had produced glanders by ingestion of glanderous matter, and M. Chauveau, who had been present at M. Renault's experiments, had often confirmed his statement. But these experiments seemed to me to prove very little. At that time glanders was very rife among horses ; the College hospitals at Alfort, where Renault was experimenting, always contained glanderous animals under treatment or observation, but we had no means of ascertaining whether the animals experimented upon were really immune against glanders or not, and there was always a possibility of contamination prior or subsequent to the experiment. This opinion was so generally admitted that in 1886 Löffler considered infection through the digestive organs as " certainly possible but not yet demonstrated."

After this I repeated the experiment on 20 subjects (18 horses, 1 ass and 1 mule) : I either spread the glanders-culture between two slices of carrot or stale bread, like a sandwich, or, by preference, I diluted it in half a bucket of water. Immediately after the ingestion of the poison I offered the subject—which had been kept on low diet since the day before—a bucket of pure water, which it drank greedily. This veritable irrigation carried along with it all the virulent particles which might have been left clinging to the surface of the higher digestive passages. In all the animals the experiment produced the same results : they all became glanderous on the third to the eighth day after ingestion of the poison. In eight of the subjects glanders was betrayed only by reaction to mallein ; in the other twelve there appeared ganglionary congestion in the region of the mouth. In addition, four of them had ulcerations of the larynx, or of the nasal septum. In all of them the lungs were infiltrated with glanderous lesions, varying in number and consisting mostly of miliary tubercles, some caseous and softened, others entirely translucent, others again in process of caseation. It may be objected that these translucent tubercles

might have existed prior to the formation of the glanderous lesions produced by the injected microbes: to this I answered that in several of these experiments I kept as tests, horses from the same stock as those subjected to the poison-injection; now, at the *post-mortem* the lungs of the test horses contained not a trace of the translucent tubercles which were found in such numbers in the lungs of their companions.

One of these experiments was conducted at the instance of the Minister for War; it dealt with six horses from regiments in which glanders had not been observed for ten years. None of these horses had reacted to mallein. Two of them were set aside to serve as tests, and the other four received—diluted in half a bucket of water—the product of a culture on potato of a very virulent glanders-bacillus. Fifty hours after the ingestion the temperature of these four horses went suddenly up eight-tenths of a degree Centig.; an injection of mallein given on the sixth day produced in the four horses an organic reaction so intense that for three days we were afraid they would succumb; the test-horses, on the other hand, bore the injection of mallein without any reaction. From the eighth day the four animals experimented on had the glands of the jaw in a viscous condition, and one of them showed a running at the nose and ulcerations of the nasal membranes. On the fifteenth day after the ingestion two of the glandered horses and one of the test-horses were slaughtered. The *post-mortem* was conducted with the greatest care, and it was found that the glandered animals had their lungs filled with a great number of miliary tubercles at all stages of development, many of them being quite translucent. On the other hand, the lungs of the test-horse contained not a single tubercle, translucent or otherwise. Was not this experiment absolutely conclusive? In healthy horses, whose lungs contain no tubercle, ingestion of a glanders product causes in a few days the formation of a great number of tubercles of all kinds: is it possible to deny after this the glanderous origin of translucent tubercles?

From another point of view these experiments have great importance: they show the danger of common drinking-troughs, which are the rule in the army and amongst our great carrying companies; let one glandered horse snort into the trough and the chances are that a great number of those which come after him to drink therefrom will be infected, and the danger will be all the greater the longer the disease is unsuspected; at each meal the opportunity of fresh infection will be presented, and for glanders, just as for

tuberculosis, a repetition of the infection increases considerably the gravity of the disease; it is this which makes glanders accompanied by nasal discharge so dangerous—by a sort of self-infection constantly repeated the patient increases daily the number of his pulmonary lesions by soiling with his mucous discharge the food which he is assimilating. We can thus also better understand the frequency of glanders in horses which make frequent stays in hotel-stables or even, without staying for any length of time, stop at hotels or inns simply to bait and receive their food or drink out of vessels in common use. Lastly, we can thus understand how the accidental and *not repeated* ingestion of food soiled by mucous discharge or by pus not in itself rich in microbes may bring about the formation of only a small number of pulmonary tubercles, but how this small number may go on developing silently in the hidden recesses of the organs and reach the final stage, absolute cicatrisation, without our having had at any time during their course the slightest suspicion of their existence.

I admitted a few moments ago that the description I have given of the evolution of the glanders-tubercle is a trifle speculative and theoretical. I will now give the objective demonstration. On the 26th January last I had a horse bled to death which had swallowed, thirteen days previously, half a bucket of water in which I had diluted about the half of a culture (on potato) of a very virulent glanders-bacillus. Even on the fifth day after the ingestion the animal re-acted to an injection of mallein in the most complete manner, and at the same time there appeared a hot congestion, painful to the touch, of the glands of the jaw. At the time of slaughtering this congestion had given place to two glands of typical glanders, rounded, hard, not mobile, without attachments to the skin. One of them gave, on exploration with the fingers, a somewhat slight sensation of deep fluctuation. At the autopsy the lungs were found to be full of tubercles of all types; three of these tubercles, softened in the centre, served for the sowing, *with a very small quantity of matter*, of three potatoes. At the same time, with a little pus from each of these tubercles, I inoculated three male guinea-pigs by peritoneal injection; these three guinea-pigs presented, the second day after, characteristic glanderous orchitis (inflammation of the testicles). With regard to the potatoes, you can see for yourselves, gentlemen, that they have all given abundant cultures. Each of them carries a large number of absolutely typical glanders-colonies (from 32 to 80), and thus the small quantity

of matter that was sown must have contained a great number of living bacilli; the cells of the central part of the tubercle, mortified and caseated, had formed a good cultivation-medium for the bacillus which has multiplied there.

With regard to the translucent tubercles, I proceeded differently. Knowing that these tubercles never contain more than a very small number of bacilli (when they contain any at all), I cut out from the pulmonary tissue, with the help of red-hot pincers and scissors, twenty translucent tubercles; I pounded them carefully in a sterilised mortar, and I then divided the whole of the pulp thus obtained over four potatoes and four tubes of gelatine, or of gelatinised blood.* Now, mark the difference of the results: of the four potatoes two remained sterile in spite of the great quantity of matter sown; of the two others one carries two glanders-colonies, the other only a single colony. Of the tubes of gelatine one presents three glanders-colonies, another has one only; the two others have none. Thus a mere trace of matter gathered from the centre of a caseous tubercle suffices to give a great number of glanders-colonies, whilst *all* the substance of twenty translucent tubercles gives only seven colonies! Remember that these tubercles were only thirteen days old, even supposing that they were formed on the very day of their ingestion. Remember that they were produced by a very virulent bacillus; yet thirteen days sufficed for the cells—in the case of two-thirds of these tubercles—to destroy the microbes! If, instead of slaughtering the animal, only thirteen days after the virulent ingestion we had kept him for twenty-five or thirty days, as we have done in the case of other experiments, it is probable that on this occasion, as on others, the sowing of the tubercles that remained translucent would have given no result. Be that as it may, these experiments prove clearly (*a*) that glanders is easily propagated through the digestive organs; (*b*) that the translucent tubercle is really a glanders-lesion and constitutes the first stage of the evolution of the classic tubercle; (*c*) that the translucent tubercles are not nearly so rich in microbes as the caseous tubercles, and that the microbes which they contain are rapidly destroyed by the cells.

I do not mean to assert that glandered horses can recover. What I do say is that a cure can be effected, and effected

*Note by Mr. Nocard.—Ten other translucent tubercles, pounded with the same care, served me for the inoculation of two male guinea-pigs in the peritoneum; only one of these guinea-pigs took orchitis, and that on the second day; it succumbed on the seventh day. The bacilli, therefore, in these tubercles, though few in number, must have been very virulent.

easily, of the discrete glanders-lesions of the lungs, which we did not know formerly, and which the employment of mallein has shown to be of so frequent occurrence in infected centres.

When we have separated from the healthy animals all those which, without presenting any clinical symptoms of the disease, have shown complete reaction to mallein, we must subject them periodically to mallein, say every two months, or at most every month—not more frequently, if we wish to avoid the chance of error arising from habituation. Gradually we shall see the number of those which react diminishing. An important thing to notice is the organic reaction, which is the first to disappear. When the horses have undergone, without any reaction (organic or thermic), two successive injections of mallein, we may without danger restore them to the ranks of the healthy: they are cured, and that definitively, of the pulmonary lesions which they bore about with them. I could give many instances of horses which under these circumstances have been working for a year or eighteen months without showing the slightest disturbing symptom and without ceasing to be quite indifferent to the action of mallein.

If all those who have boasted of being able to cure glanders have failed when they wished to give a public demonstration of their cure, it was because they operated on animals whose symptoms were unmistakable; under such conditions they could not but fail, the glanders-virus having already triumphed over the resisting power of the organism. It is quite different when we have to deal with vigorous, well-nourished animals, removed from every chance of fresh contamination; in these, the lesions, of little importance even collectively, are revealed only by mallein.

DIAGNOSIS OF CEREBRAL HÆMORRHAGE.

In a paper by Mr. A. W. Dollar, M.R.C.V.S., appearing in *The Veterinarian* for this month, on the diagnosis of cerebral hæmorrhage, I find statements which rather tend to upset the notions I had previously acquired from my books in the matter of tracing motor nerve tracts in the brain.

Mr. Dollar, after a very careful description of the symptoms, comes to the conclusion, before *post-mortem* examination, that, among other things, the facial paralysis on the left side points to injury of the seventh nerve of the right side. He further

particularises by pointing to what he considers the only seat of injury likely to cause the symptoms he describes (including besides the left facial paralysis, a slight paralysis on the right side generally, as well as paralysis of the parts supplied by the second and third nerves of the right side), and seems confident of theoretical correctness in localizing this seat of injury as "some part in the fourth ventricle, slightly to the side of the middle line, and almost directly above (*sic*) the *Corpora Quadrigemina*.

Without enquiring how this locality could be placed *above* the *Corpora*, I assume that Mr. Dollar refers to the part usually considered as about the site of the so-called "Facial Nucleus."

A small hæmorrhage here, he says, could affect the medullary nuclei of the third, fourth, fifth, sixth and seventh nerves. He previously tells us that "the symptoms point to injury of the second, third and seventh nerves of the right side, at some point near their origin," and to injury in a similar way "of the second and fourth of the left side also."

Now, as the seventh fibres from the *Cortex* have crossed before reaching this part in the medulla, facial paralysis on the left side from an injury in this locality means injury to the left side of the middle line, which I find very hard indeed to reconcile with Mr. Dollar's statement that (given the seat of injury he names) "facial paralysis on the left side unmistakably points to injury of the seventh nerve of the right side." Had the statement about the fourth ventricle not been made, it might have been supposed that Mr. Dollar meant the motor tract of the seventh nerve, traceable obscurely from the *Cortex* through the "internal capsule," with some slight connections with the "lenticular nucleus," to the opposite side by decussation in the middle part of the *Pons*."

It might, certainly, have been allowed that Mr. Dollar should speak of this tract as the seventh nerve, although this is not usually done; but I am forced to take his word for it that he really meant the seventh nerve as traceable from the medullary nucleus of that nerve, in the vicinity of which he locates his seat of injury.

Undoubtedly facial paralysis on the left side, from injury in the above site, could only mean (so far as I understand the literature of the subject) injury to the seventh nerve of the *left* side, and not of the *right* side, as Mr. Dollar suggests.

About this time of year we students become all very anxious to see that our nerve details are properly oriented, as our examiners are usually somewhat particular that we know our right from our left, and I am therefore naturally concerned

not a little to have this matter adjusted before I come before that "august body."—STUDENT.

P.S.—I take no notice of the illustration, as the text is the much more explicit of the two, besides being the only part available for my purpose.—S.

THE TSETSE FLY.

THE mystery which has hung so long over the cause of that peculiar African epizootic known as "fly disease," a disease of certain domestic animals, which our great traveller Livingstone was among the first to describe accurately and make familiar to the English reader, seems at last to be in a fair way of being cleared up. It has all along been believed, both by the natives and by the majority of travellers, that the tsetse fly (*Glossina morsitans*, Westwood) was, if not the cause, at all events the principal medium for the distribution of the disease it seemed to be associated with. This fly is a dipterous insect, slightly larger than the common domestic fly. It is provided with powerful maxillary apparatus by which it is enabled to penetrate the skin and suck the blood of the lower animals, and even traversing the clothes of man himself. As the tsetse is a voracious blood-sucker, passing in search of food from one animal to another, it is well adapted as a medium for the conveyance and transmission of the germs of blood diseases. It has an extensive distribution, being found here and there over almost the whole of Central Africa; it abounds to the north of the Transvaal, and on the right bank of the Zambesi, and it is also common on the low country lying between the Ougogo and the eastern shore of the Continent. It shuns villages and cultivated places, preferring the borders of swamps and woody places, and, curiously enough, in some way or other, its distribution is bound up with, and depends on, the presence of large game. The goat, the buffalo, the antelope, the zebra and man are not seriously affected; but the dog, the ox, the sheep, the ass and the horse, when bitten by it under what are now well-known conditions, are doomed to almost certain death. Travellers tell us how large herds of oxen have perished, one animal after another, and how, in this way, it is a serious obstacle to the settlement and civilization of the Dark Continent.

Hitherto the nature of the poison, assumed to be introduced into its victims by the tsetse fly, was unknown. Livingstone suggested that it might be derived from the secretion of

certain glands which are rather a conspicuous feature in the anatomy of the insect. Others conjectured that it might be a germ of some description. Others, again, have denied that the fly was in any way the cause of the disease. It would now appear that the natives were right, and that to a certain extent Livingstone, too, was right, in so far as he recognised the causal relationship of the fly to the disease, though wrong as to the nature of the virus. Surgeon-Captain David Bruce has shown that the true cause of the tsetse fly disease is not any secretion or property of the fly itself, but that the fly is merely the passive agent for conveying a living virus from infected to uninfected animals. This virus he has clearly shown to be a protozoon, closely resembling, if not identical with, the trypanosoma evansi, the acknowledged cause of the surra disease of India, and, possibly, identical with the similar flagellated organism found in the blood of rats aud hamsters in England and on the continent of Europe. Bruce has also shown that when the tsetse fly, after feeding on the blood of an affected animal, proceeds to feed upon an unaffected animal, it introduces the trypanosome with its bite ; and that after a short incubation period the trypanosome appears in the blood of the latter concurrently with the outbreak of fever, and that sooner or later death is almost inevitable, a high degree of anæmia, accompanied by wasting and dropsical swelling, preceding the fatal issue.

It is manifest that an accurate knowlege of the life-history of the tsetse fly is of great importance in studying the etiology of the disease with which it is so intimately associated. One interesting fact in the life-history of the insect, heretofore unknown, Bruce brings out. He finds that the tsetse fly does not lay eggs, but that it gives birth to a living larva which almost immediately seeks to bury itself in the ground. Hitherto his efforts to find out the subsequent steps of its development have not been successful, but the natives of the "fly" districts say that the proper habitat of this larva is the dung of the buffalo. If this should prove to be the case, we have in the fact an explanation of the circumstance that "fly disease" vanishes with the disappearance of the large game from a district.

Many interesting points suggest themselves for investigation, not only as regards the disease in domestic animals, caused by Bruce's parasite, but also with regard to the immunity enjoyed by wild animals. It would be extremely interesting to learn what is the natural habitat of the trypanosome. Clearly, it cannot be domestic animals ; rather

it is probable that it exists either as an insect parasite, or as an innocuous parasite in the blood of certain wild animals, just as the trypanosoma evansi, according to Lingard, exists as an innocuous parasite, or a practically innocuous parasite, in the blood of Indian rats. We do not know if any experiments have been made in Europe with the view of ascertaining whether the trypanosome of European rats is pathological to the horse and other domestic animals in this country, in the same way as the similar parasite of Indian rats is pathological to horses, dogs, and certain other animals in India. But although the "fly" disease trypanosome is pathological to the ox in Africa, the "surra" trypanosome is not pathological, or only feebly so, to the ox in India. It would almost seem that the European, the Indian, and the African trypanosomes, although closely resembling each other morphologically and biologically, belonging probably to the same species, yet differ in their pathological properties, the trypanosome of Europe being innocuous in the case of all animals, the trypanosome of India, if deadly to certain domesticated animals, being almost innocuous to the ox of that country, whilst the African trypanosome is deadly to nearly all four-footed domestic animals, the ox included. Seemingly the pathological qualities of the three varieties are graded, as it were, by climate or by breed or by other circumstances. A similar peculiarity has long been known to exist in connection with the bacillus of anthrax, which, though fatal to the sheep of Europe, does not affect the Algerian sheep.

Surgeon-Captain Bruce's discovery will draw attention once more to the part played by insects, particularly bloodsuckers, as factors in pathology. The *rôle* of the mosquito is beginning to be recognised; that of the tsetse is now established and, possibly, ere long, other bloodsuckers will be found to possess similar properties, either as active agents in the biological cycle of disease germs, as in the case of the mosquito, or as media for their conveyance from one human being or from one animal to another, as in the case of the tsetse fly. Diseases with peculiarly localised geographical distributions—distributions apparently not directly dependent on climate, but on some strictly local and limited circumstance—may be conveyed in the same way as this tsetse fly disease, and owe their peculiar geographical distribution to something of the same sort.

We trust that every encouragement and opportunity will be given to Dr. Bruce to continue his investigations, so as to

enable him to carry them to a successful issue, for we feel that, apart from their manifest economic importance, this and similar studies in comparative pathology are full of lessons and guidance to the student of human pathology.—*British Medical Journal.*

CAUSE OF THE TSETSE FLY PLAGUE.

AN instructive article is contributed by Mr. H. Blandford in a recent number of *Nature*, in which he deals in an exhaustive manner with the ravages committed by this diminutive but most terrible scourge to live stock, and which is the most formidable impediment to colonisation in Equatorial and South Africa. The tsetse is rather larger than the house fly, but is narrower when at rest, the wings overlapping. The mouth parts form a powerful, piercing, and suctorial beak. Local in distribution, the fly occurs in numerous detached regions of Africa south of the Equator, its headquarters appearing to be along the Zambesi and its tributary the Chobe. "Fly country" is hot, moist, and low alluvial ground, along river banks, covered with forest or scrub vegetation, and uninhabited save by wild animals. Within its sharply defined limits, which may extend along one bank only of a river, the tsetse swarms; it is extremely active, and eagerly attacks man or animals for the purpose of sucking blood. On man no effect is produced beyond temporary irritation of which the extent has been variously described, probably in accordance with the idiosyncrasy of the victims. Wild animals do not suffer; but domestic animals which have entered fly districts, are seized in the course of a few days with fever and wasting, and almost invariably die. Books of African travel are full of records of horses, teams of oxen, or herds of native cattle having been destroyed by entering fly districts, and on one occasion a Masai army proceeding to the attack of a neighbouring tribe, was effectually routed by having incautiously crossed fly-country.

Result of Investigation.

On behalf of the Natal Government a research is being made by Surgeon-Major Bruce, and the results of the first three months' work are just published. Dr. Bruce, in a somewhat brief recapitulation of the characteristics and habits of the fly, adds one important new fact, of which he appears scarcely to recognise the significance. The fly investigated,

which is not necessarily Westwood's species, is viviparous, giving birth to an adult larva, which creeps about actively in search of a hiding place, where in the course of a few hours, it changes by the usual skin-hardening, to a jet black puparium. Fly disease or Nagana (a Zulu term, aptly signifying to be low or depressed in spirits) is due, according to Dr. Bruce, to the presence in the blood of a flagellate infusorian. This hæmatozoon is of elongate form, furnished with a membrane or fin running along one side of the body, and a flagellum at one end.

Cause of the Disease.

The hæmatozoa of Nagana make their appearance, which is signalised by a rise in temperature, in the blood after an incubation period of seven to twenty days, swimming actively among, and apparently "worrying," the corpuscles. With the progress of the disease they increase in numbers, and, at the time of their host's death, may amount in the dog, to 310,000 per cub. mm. of blood! Neither reproductive nor any other stages of the parasite are yet known, nor has it been found in the blood of any wild animal, inoculation of which (the best test for the presence of the hæmatozoon) has hitherto failed to produce disease. Dr. Bruce has demonstrated that it is possible repeatedly to feed tsetse on a healthy dog without producing disease in that animal—that is, the flies possess no specific venom; but that, if allowed to draw blood from a diseased animal or the carcase of one, they will communicate Nagana to any healthy animals on which they are subsequently fed, and the same result is obtained by inoculation of diseased blood, or, in dogs, by feeding them on the flesh of an animal dead of Nagana. Thus far is the cause of the disease ascertained, as is the fact that the tsetse can serve as a transmissive agent; but the natural source, other than diseased animals, which are not known to occur in a wild state, whence the flies obtain the parasite is still undermined, nor is it proved that, unlike malaria, the disease cannot be acquired by breathing the air of the fly-country.

RED WATER IN QUEENSLAND.

UNDER the heading of "The Cattle Tick Plague" we find the following in a recent *Australasian*:—There is every reason to fear that the tick insect is spreading rapidly in Queensland, and from what has transpired in the matter we may conclude that the insect has become established along every route

travelled by cattle from the tick-infested country. A sufficient proof of this is furnished by an article in a late number of the Longreach *Standard*, respecting a large mob of cattle purchased by the Central Queensland Meat Company, and travelled to Barcaldine, thence to be trucked to Lake's Creed. The purchase consisted of 1,500 head of fat cattle, which were driven to Maneroo, when one half was taken direct to Barcaldine and the other made a détour so as to give time for trucking the first lot. On the way several of the cattle showed symptoms of red water, and before Barcaldine was reached 150 head had succumbed to the disease. It is believed that these cattle picked up the ticks and the disease while on the route followed by a mob of cattle from Fort Constantine, which were known to be infested with ticks. The infested cattle travelled from Winton *viâ* Eversham, Mount Cornish, Camoola and Aramac to Barcaldine, and the whole of the route is now believed to be infected with tick. So far the evidence goes to show that the tick can exist, for a time at least, in the hot, dry climate of Central Queensland as well as in the moist coast country, which was believed to be its natural habitat. That the tick and disease are spreading southward is evident from a late proclamation in the Queensland *Government Gazette*. Several experts have expressed the opinion that the tick is the cause of the disease in cattle known as red water, but which bears a closer resemblance to Texas fever than to the disease known in England as red water.

The spread of the disease amongst cattle in Queensland, known as red water or Texas fever, has led to measures being taken for ridding the cattle of ticks, which are generally believed to be instrumental in spreading the disease. In fact, it is often styled "the tick fever."

The Sydney *Stock and Station* says that the Chief Inspector, Mr. Gordon, has under consideration the matter of constructing dips at certain points in the proclaimed southern line of quarantine. These dips will be constructed on the American principle, and will be ten feet deep and cemented. The cattle will be driven into them through a narrow lane, and will come out into a cement-floored draining-yard, where the dip will drain back off the beast into the tank.

"With reference to the dip to be used in the troughs, Mr. Gordon states that only two have been found to be efficacious, and then only at great strength. Common sulphate of iron has been found very efficacious, however, at a strength of about half-a-pound to a gallon of water. If the ticks which

this solution does not actually kill drop any eggs after the immersion the eggs are found to be infertile.

"Mr. D. Miller has been successfully treating the bullocks in his paddock that were infested with ticks. The cattle, eighteen in number, were dressed with a preparation consisting of eight gallons of tallow, five gallons of oil, half gallon of Stockholm tar, and half gallon of parafine. These ingredients were mixed and heated to boiling point, and the mixture was applied while warm. The cattle were put through a crush, the liquid being applied with tar brushes and two brooms. There were a number of interested people present, including Mr. A. Brock, stock inspector. The solution proved most deadly to the insects, as several of them were taken from the cattle and a drop poured on them, and in all cases they did not live three minutes afterwards. After the cattle had been thoroughly saturated they were turned back into the paddock, and on examination four days later were found to be perfectly free from ticks."

THE PUBLIC HEALTH BILL (SCOTLAND).

AT the recent meeting of the directors of the Highland and Agricultural Society, a discussion took place as to the desirability of having some important amendments introduced into sections of the Public Health (Scotland) Bill, which have a special relation to farming interests. A series of resolutions were adopted and, the secretary of the Society has addressed a letter to Lord Balfour of Burleigh, Secretary of State for Scotland, setting forth the views of the directors. Mr. Macdonald says :—

The directors of this Society have had this Bill brought under their notice, and have discussed various provisions affecting interests in which the Society is specially concerned, notably the provisions regarding—

(1) The position of heaps or deposits of manure.—Section 16, sub-section 5, Bill No. 2.

(2) The punishment of the owners of animals or articles of food condemned as unfit for the food of man.—Section 44, sub-section 2, Bill No. 2.

(3) The employment of veterinary surgeons in the examination of live stock in connection with public health.—Sections 44 and 60, Bill No. 2.

Punishment for Ownership of Unsound Food.

The directors are of opinion that the provisions of section 44 in regard to punishment for the ownership of animals or articles condemned as unfit for the food of man are calculated to lead in many cases to grave injustice. They consider that when animals or carcases of meat are sent to the open market in good faith to stand inspection before being used as human food, the

owner ought not to be liable to a criminal prosecution in case of the animals or carcasses being condemned. Such prosecution should take place only when there is evidence of guilty knowledge—of an attempt to sell for human food animals or articles which the owner knows or has reason to believe to be unsound or unfit for such use. The directors of this Society urge that section 44 be amended so as to provide for this; and suggest, further, that it would be advantageous to have in all large market centres a dead meat clearing-house to which carcasses would be sent for inspection before being used as human food.

Employment of Veterinary Surgeons in the Inspection of Live Stock in Connection with Public Health.

The attention of the directors was called to the fact that efforts were being made to have omitted from section 60 (Bill No. 2) the provision requiring that a veterinary surgeon shall accompany a medical officer in the inspection of dairies. The directors are strongly of opinion that in all cases in connection with public health the inspection of live animals should be entrusted to properly qualified veterinary surgeons, and not to medical men. The directors therefore urge that clause 60 remain in its original form, and that section 44 be amended so as to provide that the inspection of live animals be carried out by veterinary surgeons.

I am to express the hope that these representations will receive your Lordship's favourable consideration, and that your Lordship will be good enough to commend them to the members of the Government in charge of the Bills in the House of Commons.

Farmers will be glad to observe that in the House of Lords, the Bill has been amended so as to exclude farmyard manure from the objectionable provisions in section 16. As amended, this clause now reads :—"Any accumulation or deposit which is a nuisance or injurious or dangerous to health, or any deposit of refuse or manure, *other than farmyard manure*, within fifty yards of any public road, wherever situated, or any refuse or manure contained in uncovered trucks or waggons, standing or being at any station or siding, or elsewhere on a railway, so as to be a nuisance or injurious or dangerous to health, shall be deemed to be nuisances liable to be dealt with summarily, in the manner provided by this Act."

Following the receipt of a circular from the President of the Royal College of Veterinary Surgeons, a meeting of the members of the veterinary profession in Scotland was called by Messrs. Finlay Dun, F.R.C.V.S., and Richard Rutherford, F.R.C.V.S., on Wednesday, 21st May, at the Clarendon Hotel, Edinburgh, for the purpose of discussing those clauses of the Bill affecting the interests of the veterinary surgeons in Scotland.

The following members were present :—Principals W. Williams (New Veterinary College), W. O. Williams (New Veterinary College), and I. R. U. Dewar (Dick Veterinary College); Professors Stewart Stockman (Dick Veterinary College), A. E. Mettam (Dick Veterinary College), John W. Whitecross (Dick Veterinary College), and Messrs. Finlay Dun (Edinburgh), R. Rutherford (Edinburgh), James Clark (Coupar Angus), John Borthwick (Kirkliston), C. Cunningham (Slateford), Peter Moir (Edinburgh), J. McPhail (Dundee), James

Spreull (Dundee), John Riddock (Edinburgh), Jas. McDougall (Helensburgh), J. D. Barclay (Dunfermline), Peter James (Combe Pathead Ford), Wm. Bannatyne (Haddington), A. R. Young (Edinburgh), Andrew McGeoch (Paisley), James Peddie, F.R.C.V.S. (Perth), G. A. Thomson, J. Crow-Paton (Edinburgh), P. A. McDonald, (Edinburgh), and John R. Brown, West Calder, J. Cameron, Berwick-on-Tweed.

Mr. FINLAY DUN occupied the chair, and said they were met together to consider some portions of the very large and important measure, entitled the Public Health of Scotland No. 2 Bill. In referring to the Bill, he said that it provides for the formation of local authorities, and takes cognisance of sewers, drains, and water supply. Under clause 15, local authorities were empowered and had authority to appoint medical officers, sanitary inspectors, and other officials, but not a single word was said as to the appointment of veterinary inspectors. He held that this was a serious oversight. A Government which had taken such an active interest in agriculture, should surely realise the advantage of securing, at any rate, in important centres, adequate and trained veterinarians, who would be serviceable in checking the progress of disease in animals, and in preventing such disorders as would render milk and carcases unfit for human food. The gentlemen who framed the Bill, instead of seeking for the trained expert in animal diseases, desired to delegate to medical and sanitary officers duties for which they had no training, and set aside men who were competent to perform the duties. That was obviously unjust to the medical officer, sanitary inspector, and to veterinarians, and must lead to mistakes in diagnosis, and prove detrimental to the interests of the public. Under the heading of sanitary provisions, it is proposed to enact that any medical officer or sanitary inspector may enter byres, dairies, &c. . . . As the clause runs, it appears that any medical officer or inspector may enter byres, feeding-boxes, and examine animals therein. Now, the medical officer or sanitary inspector, to whom it is proposed to delegate these duties, have no knowledge of these matters, and the only persons who have are the veterinarians. In sub-section 3 it exonerates the butchers from any obligation or penalties which may be incurred if the animal is unfit for food, and imposes penalties upon the sellers. Clause 61 of the Bill, like Clause 43, ignores the veterinary surgeon, endeavours to oust him from his proper position, and seeks to replace him by the medical officer and sanitary inspector. In his opinion, the words "requiring that inspection shall be carried out by a certified veterinary surgeon" should certainly be inserted in Clause 60. He moved, "That the members of the veterinary profession of Edinburgh and the neighbouring counties regret to find that two clauses in the Bill would seriously interfere with their *status quo* as inspectors of dairies, fairs, markets, and *abbatoirs*, and would respectfully request that a qualified veterinary inspector, or other qualified veterinary surgeon should, in all circumstances, be the person authorized to determine the health of the domestic animals."

Principal WILLIAMS said that veterinary surgeons were not infallible judges of tuberculosis in cattle, and if they, with all their training and experience, were in that position, how could a medical man, who had, perhaps, never seen a case of tuberculosis in his life, give an opinion? It was a retrograde step, and he had much pleasure in seconding the motion.

Professor STOCKMAN said it was an attempt by the public health section to obtain for their own bodies a monopoly of these appointments.

Principal DEWAR stated that he had been in communication with Mr. Cox, M.P., on the subject, from whom he had received the following letter:—

"I have a note from the Secretary for Scotland to the effect that nothing can be done in the matter to which you draw my attention until after the Bill goes to the Commons. I will, however, see that the point alluded to by Mr. Dewar receives careful attention."

Mr. DEWAR said he was in hopes that the very fact of calling attention to the absurdities of the Bill would be almost sufficient to ensure its amendment.

After some further conversation the motion was carried unanimonsly.

The CHAIRMAN stated that "the Edinburgh Corporation, in the event of clause 60, now 61, being thrown out, proposes various amendments, in which the medical officer of health or the veterinary surgeon, shall be empowered to examine animals, and moved that this meeting urge that the clause should run —"the medical officer of health and any duly qualified veterinary surgeon."

Mr. DONALD seconded the motion, and it was carried unanimously.

Principal DEWAR drew the attention of the meeting to clause 43 of the Bill, for the purpose of showing that, if passed, it would prejudicially affect the agricultural interests.

A vote of thanks to the Chairman was then passed, who informed the meeting that reports of the proceedings would be forwarded to the most influential quarters, as the Bill had yet to be discussed in the House of Commons Committee.

Cases.

TUBERCULOSIS AFFECTING THE HORSE.

BY H. H. FERGUSSON, ESQ., NEW VETERINARY COLLEGE, EDINBURGH.

THE following case of equine tuberculosis has some points connected with it that render it, perhaps, of sufficient interest to make worthy of publication.

The subject was a big, brown, shire gelding, the property of Greenall, Whitley and Co., Brewers, Warrington. They had purchased him from a neighbouring farmer, who had bought the animal some months before in Lincolnshire. It worked well on the farm, and never showed signs of ill-health, but it was remarked that, in spite of good feeding and not too hard work, the animal never seemed to put on flesh properly.

Ten weeks after Messrs. Greenall purchased him, we were called in to attend the horse, and learnt that he had been feeding badly for the past two weeks, sweated readily, and breathed faster than he ought to do. That was all. There was no cough, the bowels and kidneys seemed to act properly; the horse was cheerful. On making a careful examination, the pulse was found to be weak but otherwise nearly normal, the temperature was 102, and during the course of the illness, it varied between 100 and 102, and was never higher. The visible mucous membranes were pale, the breathing was accelerated and shallow, and the bowels and kidneys appeared to be acting properly. On auscultating the chest, there were marked abnormal sounds, and absence of sound in various areas in both lungs. Wheezing, and moist râles, and tubal

sounds could be plainly heard. The evident chronicity of the process, and the failure of all treatment, and the best nursing and dieting to in any degree improve matters, soon led us to see that the case would have a fatal ending. The owners were informed of this, and of our opinion that the horse was the subject of tuberculosis.

To this latter opinion we were guided by the history of the case, the general state of the animal, the condition of the lungs, and the fact that along with enlargement of the lymphatic glands about the neck, a bunch of them in the submaxillary space were swollen and ulcerated, and were discharging and showing no tendency to heal.

The *post-mortem* examination showed widespread eruption of tubercle. In the thorax the lungs were much increased in volume, and were not collapsed. Through every part of both organs were areas of caseation, granulation, and fibrous thickening. The bronchial glands were caseous. The pleura was little, if at all, altered. In the abdominal cavity the surface of the diaphragm was studded over with tumours varying in size from that of a golf ball to that of a bean. They were firm, dry, and their centres were caseous. They had broad bases, and corresponded to what is commonly seen in this position in tuberculous cows.

In the mesentery were three large tumours; they were immensely hypertrophied and caseated mesentric glands.

The liver, although its surface showed no alteration, was riddled throughout with masses of granulation tissue and caseous nodules.

The spleen, although as a rule affected in equine tubercle, was in this case normal.

The kidneys were enlarged, the cortex being apparently the seat of the swelling. They contained no tubercles, however. The other organs were normal. Some specimens were sent to the New Veterinary College for confirmation of the diagnosis.

Professor Williams sent us a cover glass preparation prepared by rubbing up a caseous nodule with water and staining with carbol fuchsin, in which the tubercle bacilli were extremely numerous, appearing singly and in the usual characteristic rosette-like masses.

I have unfortunately not been able to obtain the early history of the animal.

A PECULIAR ACCIDENT—RUPTURE OF THE ŒSOPHAGUS.

BY W. H. GRIBBLE, D.V.S., WASHINGTON C. H., OHIO.

ON a warm, sunny Friday afternoon two three-year old colts, the property of Glisson Bros., near Washington, C. H., Ohio, were seen at play, rearing, jumping, and nipping each other; both were seen to stand as erect as possible on their hind limbs, facing each other, and then drop to natural position, when one of them walked soberly away and the other could not induce it to return to the fun.

At evening, when the colts were put into the stable, the one showed itself to be sick; it made a pretence of eating (at least the owner thought it ate), drank a little water, and showed a soreness on left side of neck along the jugular furrow, and especially a place about midway between sternum and pharynx.

Saturday morning the left side of neck was considerably swollen, about and below the place of most tenderness; hot applications and liniments were applied, but the swelling increased. During the day the animal drank some, and the and the owner thought it ate a little hay.

Sunday morning I was called; and found a badly swollen neck, both sides (worse on the left), including the pectoral region, hot, tender, pitted on pressure, all apparently œdematous; yet not a mark on the skin, or even a place where the hair was knocked off, that we could find. There was no discharge of saliva, the temperature was only 100° F., pulse 48, and respiration not enough above normal to take any notice of, and this two days after the accident; in fact, barring the stiffness and swelling of the neck, the animal looked well and moved about without difficulty, only holding its head very low.

On account of the swelling I made no diagnosis, but thought the trouble a rupture of the fibres of the mastoido-humeralis muscle, caused by over-extension.

I passed a large seton through the skin in the medium fissure of the pectoral muscles, and a constant dripping of fluid commenced and continued. Thin gruel was ordered kept before him, of which he partook sparingly; yet seeming to suffer no inconvenience from what little he did swallow.

Monday morning I was informed that the animal's head and upper part of the neck was swollen enormously, and the dropping from the seton almost stopped; in fact, suffocation was threatened. Not being able to visit the patient, and presuming that the great swelling was due to holding the

head so low, allowing almost all the serous effusion to gravitate to those parts, I ordered hot fomentations, and to tie the head up above the level of the breast, which in a short time caused the swelling to rapidly reduce, by the fluid gravitating down the neck and out by way of the seton. Tuesday morning I again saw the animal; the swelling was considerably less, and previous to my arrival he had eaten a few mouthfuls of hay. We offered him gruel: he attempted to swallow some, but apparently all he partook of returned to the bucket through the nostrils; he drank water with the same result. This had not happened at all before; for although drinking sparingly, all he drank seemed to stay down, so I presumed it due to the swelling pressing upon the œsophagus. On account of swelling I could find no pulse at jaw. The owner thought the colt tired, not having laid down for four days, and also, for reasons of my own, I decided to throw him; so buckling up a front foot and pulling the head around to the opposite side, after a few efforts to keep from falling, the colt laid down.

In a few seconds he made a few desperate efforts to regain his feet, when suddenly, as if in a moment, a great change came over the animal; he laid flat on his side, mouth open, gasping for breath; breathing through the mouth, respirations hurried, and heart so rapid we could not count the beats, and in a few moments, without a single other struggle, quietly died.

Imagine my feelings; the owner, his wife, sister, and neighbours looking on. I must confess to feeling a little foolish, for with pulse, temperature, respirations, and general appearance, I had not thought the patient at all dangerous: simply a bad bruise or a few ruptured fibres of a muscle.

I decided to at once make an examination of the neck; so making an incision through the skin and swollen tissues at the place where the first soreness and swelling exhibited itself, I found the inferior border of the mastoido-humeralis muscle torn across (transverse) about two inches; and in the cavity thus made and surrounding parts, was a quantity of hay, bran, etc. On removing this, and making the incisions larger and longer, what was my surprise to find a longitudinal rupture of the muscular coats of the œsophagus for a length of nearly seven inches, and of the mucous coat for about three and a half inches, the swelling being, mainly, nothing but the fluids drank by the animal passing out through this rupture and circulating through the connective tissue, etc., and the reason why the gruel, water, etc., drank this morning

had returned through the nostrils was due to eating the hay previous to our arrival, it having passed out through the rupture, filling the space and then acting as a choke. One can imagine the bare possibility of a transverse rupture of the œsophagus through over extension, but not, so it seems to me, a longitudinal one; yet, again, even if the colt had been struck or kicked by its playmate during the time it reared, is it not practically impossible to produce such an injury without at least cutting through the skin?

If one is at a loss to account for the accident, or how it could possibly occur, is it not more puzzling why, with such a dangerous trouble, it did not have a greater debilitating effect upon the animal; its danger, readily observable by pulse, respiration and temperature.

I removed about twelve inches of the œsophagus and photographed it.

Will the editor or any veterinarian kindly offer some comments or explanation of the accident, and greatly oblige the writer?

Later.—Since writing up the case I have experimented some, and think the injury *could* be done by one horse grasping the mastoido-humeralis muscle with his teeth, just when a horse rearing in the air is about to come down, as horses at that point always turn their head, making the neck curve convexly towards their playfellow, and the teeth might so catch the œsophagus in behind the muscle, so tearing muscle loose, etc.

AN UNCOMMON CASE.

BY R. E.

DEAR SIR,—Regarding the portion of near hind limb submitted to you to-day, is the subject of a peculiar case after cauterizing. *History.*—A four-year-old, nearly thoroughbred, mare, suffering from bone spavins, both hocks, was operated on in the usual way on the 15th inst. On the 18th inst., at 8 a.m., the hocks were dressed as is usual, when immediately afterwards the leg in question began to swell to an enormous size, extending as far up as the mammary glands, and slightly extending along the abdomen, with acute pain, weak fluttering pulse, 84, temperature 101°; at 8 p.m. pulse 120, temperature, 102°, slight colicky pains, respirations hurried; at 2 a.m. death ensued. About 28 hours after the first appearance of the unusual swelling the off hind leg was all right. *Remarks.*—Afterwards I ascertained quite

accidentally that a cow had died on the farm, the *post-mortem* of which had been made on the same place (a straw yard) where the mare was cast, and the owners could not ascertain the cause of the death of the animal. When the near hind leg of the animal was being operated on, the animal struggled violently, dust and chaff flying in all directions, some no doubt adhering to the dressing as it was inserted into the leg. A further look round the stud of about 20 horses, I discovered several cases of stomatitis pustulosa contagiosa which was unknown to the owner; the animal operated on was apparently just commencing with this disease. From this hurried communication, and portion of limb forwarded, I should be glad if you could determine the true cause of death. Could it be due to artificial induction of putrified blood, &c., through the mare struggling and disturbing the residue of the *post-mortem* of cow, which had only been held about a week previous to the operation, or was it due to the mare suffering slightly from stomatitis pustulosa contagiosa, which was, of course, unknown to me at the time of operation?—I am, yours faithfully, R. E.

[The portion of limb sent showed enormous œdematous swelling of the subcutaneous and inter-muscular connective tissue. A bloody serocity oozed from it when pressed with the knife. Cover-glass preparations stained with Loeffler's methyl blue and by Weigart's method enabled one to find innumerable streptococci in the fluid. In sections hardened in alcohol (after previous fixing), the connective tissue spaces were seen to be greatly distended by a fibrinous exudate. which contained great quantities of blood corpuscles. Some of the capillaries were blocked by zooglea masses of micro-organisms. The case was undoubtedly one of blood poisoning, and our correspondent is very likely right in his suggestion that the *post-mortem* may have furnished the virus; the weakened condition of the part from the causticing would doubtless assist in producing or intensifying the attack.]

AMPUTATION OF THE UTERUS OF A COW.

BY W. H. CURTIS, D.V.S., MARENGO, ILL.

I WAS called December 30th, 1895, to the farm of Mr. P., to attend a cow that had calved the night previous. Found inversion of uterus; could not replace it. Amputated at neck by using three ligatures, ligating in three sections. Used creolin as an antiseptic, followed by daily injections of solution of boracic acid. Cow made a good recovery.

STRYCHNIA IN THE TREATMENT OF PARTURIENT FEVER.

BY W. H. DALRYMPLE, M.R.C.V.S., BATON ROUGE, LA.

ON March 20th, at 10 a.m., the writer was requested to visit a high-grade Jersey cow belonging to a herd that supplies one of the large State institutions with milk. The attendant reported the cow having given birth to a fine heifer calf the previous night, in a pasture lot adjoining the stable, and when seen by him at 6.30 a.m., was staggering in her gait, and several times had fallen.

When we got there, we found the animal lying on her side with her limbs stretched out, but not yet quite comatose, which, however, she became soon afterwards. Placed the cow in as comfortable a position as possible (on sternum), and propped her up with sacks filled with hay, got rid of the fœtal membranes, and washed out the womb with an antiseptic solution; emptied the bladder, and unloaded the rectum, and as there was a good deal of tympany, punctured the rumen.

As the animal could still swallow, gave a saline cathartic.

Sponged the exposed part of the body with dilute acetic acid, and covered over with warm blankets.

About 11 a.m., commenced administering hypodermatically, an aqueous solution of sulphate of strychnia (Strych. sulph. grs. ss.; Aquæ i. drm.) every two hours. After four doses, the strength was doubled, and four other doses given. From about twelve to fifteen hours, the animal was in a perfectly comatose condition.

About 4 p.m., on the 21st, slight signs of returning consciousness were observable. The breathing which had been slow and stertorous, now became faster and altogether through the nasal passages. Slight lachrymation, showing the glands were resuming their function. A small evacuation from the bowels. Returning sensitiveness of the skin, exhibited by the movement of the panniculus to resist flies.

On our next visit, at 7.30 p.m., cow was lying in natural position without assistance, and partook of a gruel, which she seemed to relish.

At 8 p.m., she was on her feet.

From the time the animal first became affected, until she was up, must have been only about forty hours.

We may state that during the attack, the cow was turned frequently from one side to the other, the udder kept stripped, and injections per rectum and vagina.

This case seems to be another added to the list of successes following the strychnia treatment, one of which was recorded by Dr. Herbert S. Perley as recently as the February issue of the *Review* (American).

This treatment is recommended in Friedberger and Frohner's work, and, of course, can hardly be looked upon as new, although we do not think it is by any means in common use. It is certainly worthy of more extended trial, being, as it appears to us, extremely rational, and from results, promisingly successful.

Editorial.

OUR RETIRING PRESIDENT.

It is pleasant to turn aside from contentious matters, to shake off the dust of the arena, and speak words of praise and admiration about a colleague. My readers who have followed the accounts of the proceedings in the Royal College of Veterinary Surgeons will have noted with pleasure the zeal and activity displayed by Mr. J. F. Simpson in connection with the attempt to oust us from the position which we are entitled to hold as meat inspectors. With most commendable promptitude Mr. Simpson took up the defence of his professional brethren. I allow him to speak for himself:—

Immediately the subject came to my notice, I brought it before the members of the Council of the College, who entrusted me with the responsibility of using every effort to prevent any alteration being made in the section referred to. I communicated at once with the President of the Local Government Board and the Board of Agriculture, and at an interview granted by the Secretary of Scotland (Lord Balfour of Burleigh), the promoter of the Bill, I pointed out that if the proposed amendments were admitted, they would be a source of danger to the public, and create the risk of undeserved ruin falling on agriculturists and dairymen, in consequence of the total inability of the majority of medical officers to detect disease, or even to recognize the evidence of health, in dairy cows. Apart from these considerations, I desired him to consider the insult to the veterinary profession which the suggestions conveyed.

I had the pleasure of quoting notorious and recorded cases in which it had been demonstrated by members of the veterinary profession that medical officers had signally failed in their attempts to show that certain simple diseases of cows can, under any conditions, be communicated to man by the consumption of milk. The suggestion that "a qualified veterinary surgeon could not be found in every county of Scotland," I pointed out, was a misleading one, and absolutely incorrect, and it afforded me satisfaction to lay before Lord Balfour the register of the Royal College of Veterinary Surgeons, which shows that at the present time there are over 500 gentlemen holding the diploma of the Royal College, in actual practice in

Scotland. Further, I drew his attention to the actual number practising in each county.

Lord Balfour assured me that he would not voluntarily accept the amendments, and I am happy to say that, although the attempt was made to pass them, they have been rejected by the House of Lords Committee. The Bill will come up for "report" in the course of a few days, and at that stage I do not anticipate danger, but, shortly after, it will be sent to the House of Commons, and here again, doubtless, the same objectionable amendments will be persevered with.

It may be said that this is a benefit which Mr. Simpson has conferred only on Scotland, the smaller part of the country, and deserves no special recognition from English surgeons. I don't think so: I am a believer in the solidarity of the profession, and hold that the welfare of the individual is the concern of the whole body. There is a saying about the thin end of the wedge which is thoroughly applicable here. In olden times there was a rhyme which was regarded as a sort of axiom by the English and which ran thus:—

He that wishes France to win,
Must with Scotland first begin.

Possibly our medical friends may have consciously or unconsciously followed this precept in their recent attempt to capture our position, but their next effort would have been directed, not exactly to France, but most certainly to the rich spoils of England. I beg my veterinary friends in England to take careful note of this adroit flank movement and, whilst putting their trust in Providence, to keep their powder dry.

As if this were not enough to win the gratitude of his brother practitioners, Mr. Simpson has directed his efforts towards the abolition of another grievance. For a long time past we have, as a profession, suffered under the stigma of subordination to an "Animals Department"—the name seems to stink!—with a military man at its head by which and whom orders were issued in what seemed to the most of us a ridiculous and haphazard way. It was inevitable that confusion should arise and friction be produced where there was such incongruity of circumstances. Mr. Simpson resolved to act as the champion of the profession and interviewed Mr. Long, the President of the Board of Agriculture. An account of this interview is printed elsewhere and will be read with intense interest by all veterinary surgeons throughout the county. As a result, Mr. Long has agreed to restore the old Veterinary Department with a veterinary surgeon at its head. The right honourable gentleman expresses the hope that the friction between the profession and the Department will now cease. For my part I say most thankfully, yes, so be it. Friction means loss of power, waste of energy;

let us be thankful when it disappears and when the professional wheels run smoothly.

THE EDUCATION QUESTION.

THIS is undoubtedly the most important question before the profession at the present moment. It has reached an acute stage, a crisis is impending, and the welfare of the body may be seriously imperiled, or it may be put entirely beyond the reach of danger by the action to be taken by the members within the next few weeks. Let us remember that we are physicians and that it becomes us therefore to approach this serious case with cool heads and steady pulses; let us not act as if we were ignorant laymen or hysterical women. I must protest for myself and on behalf of my fellow-teachers against the offensive language used by some of my less scrupulous opponents. The very title of an article in a contemporary is an insult and an outrage. Does this publication mean gravely to assert that I and my colleagues are actuated by mere base, worldly, and selfish motives and are utterly devoid of principle? Are these the courtesies of debate? Is it for my opponents to pose as the only righteous men in the profession and to thank Heaven that they are not as other men are? Such complacent pharisaic vanity would be intolerable were it not so ludicrous and so contemptible. Am I, who have stood before the world so long as a teacher and practitioner, to be branded as one who is deaf to everything but his own immediate interests? I should be a fool if I were so short-sighted. Any blight that falls upon the profession must sooner or later—most likely, very soon—react upon me, must eventually ruin me; and I claim to be neither short of sight nor anxious to commit financial suicide.

My opponents take for their shibboleth the phrase "all at one time," and they treat as professional outcasts those who cannot conscientiously adopt the phrase. Shibboleths are very often dangerous things; they tend to become stereotyped, to lose their original meaning, to be used for purposes that were never contemplated by the originators. My opponents point to the medical profession as a model for us, and they insist on the necessity of following the medical lead if we wish to attain to the medical level. I am as proud a man as they; I am as ambitious for my profession and its social status as they, but I am not sure if equality and identity are always or necessarily synonymous terms. But first let us

see if there is not identity. A young friend has just left me who entered at the University of Edinburgh last October as a medical student. He told me that he had to pass in only three subjects at the University preliminary examination, namely, French, Latin, and Mathematics. I asked him about the sacred four, and he told me that he was exempted from passing in English by presentation of a Leaving Certificate from the Scottish Education Department. This certificate he obtained in July last. During the summer months he had been busy "grinding up" the other subjects with a tutor. Now, I know that my young friend's case is not a solitary one, as anybody can discover for himself if he takes the trouble to apply to the University authorities; and I should like to know why a veterinary student is not to obtain the same privileges. The object of the Medical Council is, undoubtedly, a laudable one. They wish to admit only young men who have been liberally educated, that is, who have been permitted by wise parents to give their whole attention to their school-work whilst they were at school, and have neither been distracted by any sordid care on the one hand, nor demoralised by laxity of discipline on the other. Such lads start in the race of life under the fairest auspices, and ought to have no difficulty in passing all the subjects at one time: they ought, as a general rule, to be mercilessly rejected if they do not. But all the trees of the wood do not grow alike. Even amongst these fortunate lads there may be some who can write a good examination paper only in three, or, perhaps, only in two subjects at a time; these are often the profound or the acute minds—most useful in our profession—but they lack comprehensiveness. It is for them I am contending. It is their battle I am fighting; and I say that if the Universities concede something, we may concede a little more. Too high a literary standard ought not to be set up for young men joining a scientific profession, especially one like ours, where muscular strength is sometimes of more practical value than skill with the microscope or the pen. But even if a high standard must be set, then leave an opportunity for the acute minds to get through. Set, if need be, a higher standard in each individual subject for those students who cannot take the whole at once; but don't reject them. I have constanly found such men to turn out careful, competent practitioners, outstripping their vain-glorious rivals, who had boasted of taking all the preliminary subjects at one gulp.

I will add one more word of warning. It is pretty well known that since the Scottish Universities established, by

Act of Parliament, their Joint Board of Examiners some three years ago, a great deal of grumbling has been heard in academic and medical circles because the Board increased the severity of its examinations. I believe that something like a revolt was contemplated when the first Draconian regulations appeared in the newspapers, and that it was found necessary to modify these considerably. Even now the complaint is frequently heard that young men who are rejected by the Universities at the preliminary examinations as insufficiently prepared, do not return to school or to private study, but go to rival establishments whose portals are not so jealously guarded, or are lost to the profession. This is the result, perhaps, of running in advance of public opinion and public needs. I should like to have only the best youth of the country to train for the veterinary profession, and to make every student a master of his work and a credit to the great guild of physicians; but I have fears of setting up an arbitrary or too high a standard for the youthful entrants. I wish to follow the opinion of the wise in educational matters and to take the best means of selecting those young men who will make the best surgeons and the best citizens. In writing these lines I have endeavoured to avoid all pedantry and affectation, to avoid posing as a superior person, and to speak forth the words of sober reason and plain, common sense. Let my professional brethren decide between my opponents and myself; I cheerfully leave the decision to their wisdom, and as bearing upon this important matter, I here insert two letters from the highest educational authorities in Scotland, namely, Dr. Morrison, President, and Dr. Mackay, Secretary, of the Educational Institute of Scotland.

FREE CHURCH TRAINING COLLEGE, GLASGOW,
December 22nd, 1895.

DEAR PROFESSOR MCCALL,—Referring to our conversation this forenoon, I have no hesitation in giving it as my very decided opinion, based on a somewhat lengthened experience, that to require veterinary students to pass the whole preliminary examination at one time is educationally a mistake. It stands, I think, to reason that a young man will derive more benefit from concentrating his attention on one or two subjects at one time than by dissipating his efforts on all the subjects required at the examination. I have consulted many of my professional brethren, and their unanimous verdict is in favour of my contention.

I am, yours very truly,
THOMAS MORRISON, LL.D., *Principal.*

40, PRINCES STREET, EDINBURGH,
20*th May*, 1896.

DEAR SIR,—Referring to our conversation of yesterday, I have no hesitation in saying that, in my opinion, it would not only be unreasonable, but educa-

tionally a mistake, to require veterinary students to pass all the necessary subjects of the preliminary examination at one time.

It was a great advance on the previous examination to require them to pass in all subjects on the level of medical students; and to require them now to pass all at the same time, without at least some years of warning of such a change, would, in my opinion, be a serious hardship.

From my knowledge of the past and the present, I can say that, taking one or two subjects at a time, they have very creditably come up to the new requirements. But to require those—and they seem to be the majority—who have for years been engaged in other employments, to pass at once in all the subjects would be unreasonable.

I know that many of the class referred to become good students. They are, as a rule, led to adopt the new profession by an intellectual impulse, springing from extensive and thoughtful reading. But they have forgotten the technicalities that bulk so largely in formal examinations; and while they can pass well in one or two subjects at a time, and in the end attain to a good level of scholarship, the effort to pass all at once would, at best, mean the lowest pass-marks, but more probably the exclusion from the profession of many capable of taking a distinguished place in its ranks.

Yours very truly,

ALEX. MACKAY, LL.D., F.E.I.S.

PRINCIPAL WILLIAMS,
Veterinary College, Leith Walk, Edinburgh.

CASES OF IRRITANT POISONING IN CATTLE.

BY CHARLES BLACKHURST, M.R.C.V.S., PRESTON, LANCASHIRE.

ON July 4th, 1895, I was called to see five cows, the property of Mr. James Sutton, Farmer, Ingol near Preston. On arriving at the farm, I found three of them purging violently, the excreta resembling strong thick coffee mixed with portions of mucus. The other two were straining violently and passing long clots of blood, 18 inches in length and 2½ inches in diameter. The temperature in the first three cases was 105, pulse 90, respirations greatly increased, saliva dribbling from the lips, and eyes retracted within the orbit, and secretion of milk entirely stopped. The second two, temperature 108, pulse 100, very weak, and animals lying in a semi-comatose condition.

On making enquiry as to the food, Mr. Sutton informed me that on the previous day the cows had been turned into a meadow (along with some others) which had just been cleared of the hay with the impression that the cattle would eat up the rough grass growing in the ditches, I went and examined the meadow and found two large patches of the Mercurialis Perennis, (Dog Mercury) growing in one of the hedgerows, and this had been unevenly cropped. As it is a well-known fact that Dog Mercury is a great cause of diarrhœa in young stock

in the early spring, I at once made a thorough examination of the plant, and found that in one patch the plants were very rich in seeds. Dog Mercury being of the same natural order as the castor oil plant, I was certain the eating of these seeds was the cause of the mischief in the cattle.

Treatment.—The first three cows, I administered to each a quart of linseed oil and 4 ozs of bicarbonate of soda, and the following morning they were much better but very thirsty.

On the 6th July, they were all three ruminating, temperature normal 101, pulse normal, and giving a little milk.

On the 8th, perfectly well and giving nearly their full quantity of milk.

As treatment of the two animals which were passing clots of blood, I administered :—

Extract of ergot, 1 oz.
Tannic acid, 1 drm.
Turpentine, 1 oz.

in two quarts of flour gruel every 3 hours, for the first 12 hours.

On the 5th, both cows stopped bleeding.

On the 6th, purged slightly.

On the 7th, commenced to ruminate.

On the 8th, began to pass clots of blood equally as bad as on the first day. Repeated medicine as before.

On the 9th, very weak and the skin over the shoulders, neck and face, drawn into wrinkles, animals very thirsty, no appetite, lying down all day with heads resting on one side.

On the 10th, one cow died, the other looking in a very dejected state, respiration very slow, temperature sub-normal, pulse imperceptible, administered eggs and milk.

On the 11th, a little better, went on with eggs and milk.

12th.—Improving ; continued eggs and milk.

13th.—Commenced to lick the floor and the attendant's hands.

14th.—Still improving, and drank some gruel after adding salt.

15th.—Ate a small handful of hay, and commenced to ruminate.

16th.—Commenced purging, the excreta tinged with blood. Administered plumbi-acetate and tinct. of opium, small doses every hour.

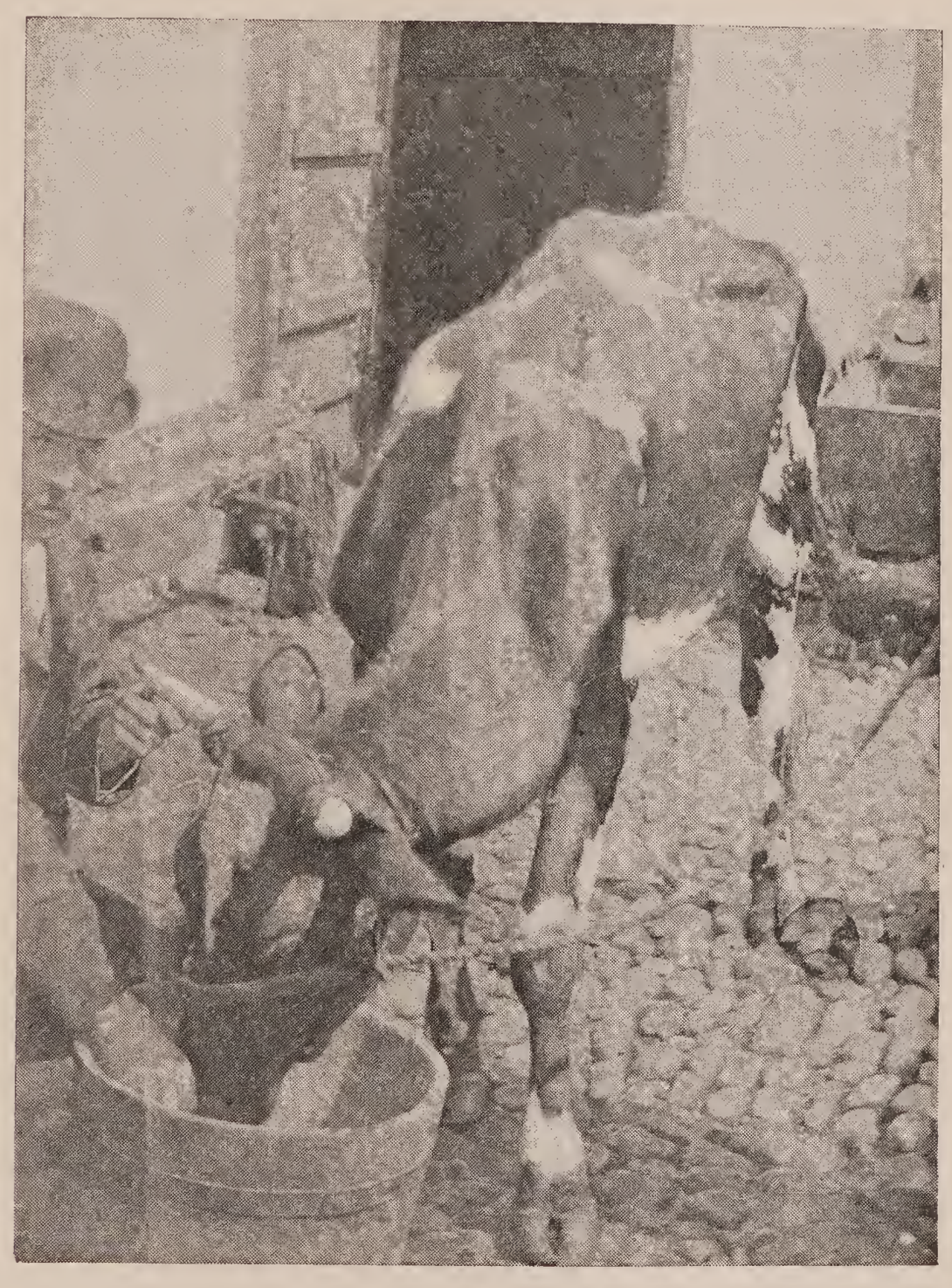
17th.—Fæces quite normal.

19th.—Eating well.

20th.—Considerably better.

On the 24th.—Quite convalescent.

On August 1st a most extraordinary symptom made its appearance; the left cheek was drawn up, the left eyelid fallen over the eye, and the neck taking a peculiar curve like the half figure of eight from side to side, and unable to raise the head from the ground. Appetite good, and eating food ravenously. I recommended hand rubbing over the neck,



and administered nerve tonics. This treatment was continued for six weeks, but the animal's neck never regained its proper shape. The appetite was normal, and the beast appeared in every other respect perfectly healthy. At the end of five months she was sent to the butcher's. After being killed and dressed the carcase weighed 624 lbs.

On dissecting the neck, I found the muscle on the right hand side rich in fibrous tissue, and the last three joints of the neck were partially anchylosed. On the 12th day of July I began to experiment with six full-grown rabbits; two of them were fed upon boiled leaves, two upon boiled roots and stems, and two upon boiled seeds, without any ill effects. Three weeks afterwards I fed the first two rabbits on the fresh leaves, two others on the fresh stems and roots, but these two wouldn't eat it until they were starved to it. The next two were fed upon the ground seeds mixed with oatmeal. The first two showed no ill effects; the remaining four suffered and showed signs of drowsiness, and died within a few hours after showing first signs of drowsiness, and on *post-mortem* examination I found they had died of gastritis. I then fed the two remaining rabbits upon effusion of the seeds and oatmeal, and they died on the second day; the *post-mortem* appearances were similar, but not so marked as in the other four.

Dr. Eurick, Chief Pathologist, County Asylum, Whittingham, has taken great interest in these cases, and I have to thank him for the sections and examining them with the microscope.

The genus *Mercurialis* belongs to the natural order Euphorbiaciæ, a very suspicious order, including such plants as the Castor oil, and Croton, and the noxious Euphorbias, with their blistering juices. There are two species of Mercurialis, viz., M. annua and M. perennis. The former, altnough when fresh and raw, poisonous, is used in Germany, after being boiled, the boiling getting rid of the acrid poisonous qualities.

As the leaves contain a good deal of mucilage, an old use for them was as an emollient.

M. Perennis, a perennial plant, as its name indicates, with a whitish, slender rhizome. The opposite stipulate leaves are practically sessile, the leafstalks being very short. They are slightly hairy and green, but the green changes to a blue if the specimens be badly preserved. Indeed, when steeped in water, they give out a fine blue resembling indigo.

The plants are unisexual, the leaves of the female plants being generally narrower.

The flowers appear before the leaves have attained their full size.

Male flowers have a varying number of stamens 9—12.

The female flowers have a two, seldom a three-lobed waxy fruit, a capsule with seeds containing much endosperm. The seeds are subglobular, reticulate, and slightly shining.

Use of the plant causes violent purging and convulsions.

Pathological Report.

On July 10th, 1895, Dr. Eurick, of the County Asylum, Whittingham, and myself, examined the alimentary tract of above cow, 12 hours after death. The thoracic organs appeared normal. The uterus contained a three month's fœtus. The rumen was full of food, its mucosa sloughing, of a slaty blue, and stripping readily, especially over the bands, leaving the subjacent papillæ very prominent, and of an angry red colour. Here and there, small sub-mucous hæmorrhages were noted. The mucosa of the abomasum sloughed in a similar way; and this chamber was in all respects like the rumen. The psalterium sloughed in identical fashion, and while pieces of rumen and abomasum could be hardened, *in toto* for subsequent examination, the psalterium could not be so treated, as its mucosa came away, attached to the contents which were rather dry and of a gummy consistence. The contents of the fore-stomach, were fluid and of pea-soup colour; the mucosa adherent, here and there reddened and thickened, with several more or less circular ulcers scattered over its surface, of size of a florin, without any particular site of selection. The sub-musosa was injected, with one or two minute hæmorrhagic extravasations. The small intestine presented a somewhat injected, thickened and sodden mucosa, with excess of mucus; its contents were of a greenish-grey colour, and fluid. Peyer's patches and mesenteric glands were not enlarged.

The rectum presented an injected, thickened, sodden mucosa, covered with excess of mucus, with thin, viscid grumous contents. On scraping the mucus away, there were seen small, reddish-grey, ulcerating areas, none larger than a lentil, here and there confluent, whitish towards the edges, which were slightly raised, while the centre was somewhat pitted. They appeared to correspond to solitary follicles; their confluence occurred in the long axis of the gut.

The colon from the rectum upwards showed similar, but not so extensive, changes, with petechial hæmorrhages in submucosa, especially in the lower and adjoining the rectum. There were no ulcers visible, but the mucosa came away with extraordinary ease. The ascending colon differed from the rest of the large gut in the greater severity of the process; its contents were more blood-stained and of a lighter red. A foot from the valve the mucosa was intensely injected and thickly covered with slime, under which were ulcers similar

to, but larger than, the follicular ulcers noted in the rectum. The necrotic inflammatory process reached its greatest intensity, however, in the cæcum which was similarly ulcerated, and contained large masses of dark-red, semi-clotted blood.

The liver and kidneys were fatty, but presented no other obvious morbid appearances.

The microscopic appearances of sections taken from various parts of the alimentary tract showed nothing demanding special description. All stages of inflammation could be seen —from those of injection and leucocytosis, to necrosis of the affected parts. The mucosa was in all cases most involved, while the submucosa showed mainly the inflammation without tissue-death. In the large intestine the solitary follicles were enlarged, and the ulcers noted owed their origin, as we suspected, to these same lymph-follicles.

PUBLISHERS' STATEMENT.

The Circulation of THE VETERINARY JOURNAL.

DURING the time (now nearly a quarter of a century) Messrs. Baillière, Tindall and Cox have published this Journal, they have never had occasion to intrude a personal matter upon the readers of its pages. Unfortunately, this desirable state of affairs was interrupted by the Proprietor of *The Veterinarian* last month, which has rendered an explanation necessary on their part.

In the number referred to a gratuitous statement, which had not the shadow of foundation, was made that the circulation of *The Veterinarian* (which was stated in that number to have attained over 2,900 copies) showed an excess of at least 2,300 over any monthly veterinary publication. This statement was, of course, made to catch the advertisers and to damage the reputation of THE VETERINARY JOURNAL. It will be noted that the *ordinary circulation* of *The Veterinarian* was not specified, but it was left to the reader to infer that it had then reached to the large number named (viz., 2,900), an inference which we venture to think the proprietors would experience considerable difficulty in estab-

lishing as a fact, and it will, moreover, be interesting to know what proportion of the copies circulated formed the subject of "gratuitous distribution."

Some months ago Messrs. Baillière, Tindall and Cox had occasion to ascertain what was actually the circulation of *The Veterinarian* to subscribers, and they satisfied themselves that the subscriptions and sales of THE VETERINARY JOURNAL were then more than double those of *The Veterinarian*. They nevertheless refrained from spreading these facts, and have never attempted to attack or injure *The Veterinarian* or any other publication, believing that there is room for all. They regret, therefore, that the proprietor of *The Veterinarian* has not followed the same honourable course, but has gone out of his way to endeavour to injure this publication.

Messrs. Baillière, Tindall and Cox have placed the matter in the hands of their solicitors with instructions to take such legal action as may be necessary, unless a withdrawal of the inaccurate statement is made.*

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

NOMINATIONS FOR COUNCIL.

Almond, N.
Butler, R.
Clarkson, J.
De Jong, E. F.
Elphick, G.
Hunting, W.
Hurndall, J. S.
Hutton, J.
Lambert, J. D.
Lawson, A.
McCall, J.
McFadyean, J.
Mulvey, W. J,
Peele, J. E.
Shave, E. S.
Simpson, J.
Thompson, H.
Villar, S.
Wartnaby, G.

May 13th.

COPY OF CIRCULAR

ISSUED TO THE MEMBERS OF THE VETERINARY PROFESSION IN SCOTLAND.

To the Scotch Members of the Profession.

DEAR SIR,—The Public Health Scotland (No. 2) Bill is now before Parliament. Section 60 provides for the compulsory employment of veterinary

* Whilst at press we learn that the required apology will be published in the June number of *The Veterinarian*, which has been accepted by our solicitors.

surgeons, by local authorities, for the examination of cows on a farm or dairy when it is suspected by the medical officer or sanitary inspector that dangerous infectious diseases in man are due to the consumption of milk from diseased cows.

Such a section, I venture to think, should commend itself to all impartial individuals as a prudent and necessary one. It is, however, a fact that the Corporation of the City of Glasgow has memorialised for alterations, which alterations, if accepted, will have the effect of handing over to medical men the duty of determining as to the existence of diseases in animals, and excluding veterinary surgeons in Scotland from taking any part in so important a decision. The reasons given for the suggested amendments are as follows :—

(1) That there is no justification either in necessity or expediency for the employment of a veterinary surgeon.
(2) That medical men first pointed out the special diseased conditions in cows which entail grave risk to the consumers of their milk.
(3) That it would be difficult, if not impossible, to find a properly-qualified veterinary surgeon in many counties in Scotland.

Immediately the subject came to my notice, I brought it before the members of the Council of the College, who entrusted me with the responsibility of using every effort to prevent any alteration being made in the section referred to. I communicated at once with the President of the Local Government Board and the Board of Agriculture, and at an interview granted by the Secretary for Scotland (Lord Balfour of Burleigh), the promoter of the Bill, I pointed out that if the proposed amendments were admitted, they would be a source of danger to the public, and create the risk of undeserved ruin falling on agriculturists and dairymen, in consequence of the total inability of the majority of medical officers to detect disease, or even to recognise the evidence of health, in dairy cows. Apart from these considerations, I desired him to consider the insult to the veterinary profession which the suggestions conveyed.

I had the pleasure of quoting notorious and recorded cases in which it had been demonstrated by members of the veterinary profession that medical officers had signally failed in their attempts to show that certain simple diseases of cows can, under any conditions, be communicated to man by the consumption of milk. The suggestion that "a qualified veterinary surgeon could not be found in every county in Scotland," I pointed out, was a misleading one, and absolutely incorrect, and it afforded me satisfaction to lay before Lord Balfour the register of the Royal College of Veterinary Surgeons, which shows that at the present time there are over 500 gentlemen holding the diploma of the Royal College, in actual practice in Scotland. Further, I drew his attention to the actual number practising in each county.

Lord Balfour assured me that he would not voluntarily accept the amendments, and I am happy to say that, although the attempt was made to pass them, they have been rejected by the House of Lords Committee. The Bill will come up for "report" in the course of a few days, and at that stage I do not anticipate danger, but, shortly after, it will be sent to the House of Commons, and here again, doubtless, the same objectionable amendments will be persevered with.

I very earnestly beg you to send me a letter or postcard on receipt of this, informing me that you will either write to, or interview, your Parliamentary representative, that I may be assured every Scotch member of Parliament will have the subject brought to his notice.

With united action I feel certain we shall succeed in defeating this attempt to deprive Scotch members of the profession of their rights and proper

recognition, but lukewarm action may be attended with results disastrous to their future.

To put it briefly, ask your Parliamentary representative, either verbally or by letter—

(1) To give his support to section 60 of the Public Health Scotland (No. 2) Bill.

(2) To endeavour to so alter section 44 of the same Bill that veterinary surgeons shall in future be the meat inspectors.

Waiting your reply, I am, dear sir, yours faithfully,

London, 17*th May*, 1896. JAMES F. SIMPSON, *President.*

ELECTION OF COUNCIL, 1896,

DEAR SIR,—An attack has been made upon me at the last moment, just as voting papers are being issued to members, and when it is thought it will be too late for me to reply to it.

I deny in the most positive manner that any letter has ever been withheld from the Council by me.

I deny most positively that I have ever acted other than under the direction of the solicitor to the College with regard to the calling of meetings and other matters open to doubt.

It is absolutely untrue that I had power to call the special meeting earlier than I was advised by the solicitor. (See Charter, page 19.)

I must positively deny that I have since occupying the chair withheld any information in my possession from the Council.

Never in my life have I expressed myself opposed to the undivided certificate, and the partial extracts from one of my letters is simply my interpretation of the existing bye-law, which in its present state is not definite and its alteration will engage the attention of the Council at its next meeting.

I have stated that the bye-law should be made clear and that the words "No divided educational certificates will be accepted" should be added, as is the case in the medical regulations; with such an addition there could be no mistake as to the Council's intentions.—I am, yours faithfully,

JAMES F. SIMPSON.

Maidenhead, *May* 20*th*, 1896.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE annual meeting was held on Friday afternoon, May 1st, 1896, in the Hotel Metropole, Newcastle-upon-Tyne, Mr. G. Elphick (President) being in the chair.

The minutes of the last quarterly and special meeting were read and confirmed.

The SECRETARY read letters of apology from Professor Dewar and many others, regretting their inability to attend.

The PRESIDENT said their worthy President of the R.C.V.S. had promised to be present, but was unfortunately prevented.

On the motion of the SECRETARY, seconded by Mr. PEELE, Mr. F. Brown was elected a member of the Association.

The annual financial statement was then submitted.

The PRESIDENT said he was told there were a good many subscriptions in arrear. When these were paid they would be in a fairly satisfactory financial condition.

Mr. PEELE moved that the Secretary write to the members in arrear asking for their subscriptions. Mr. MOORE seconded, and the motion was carried.

Mr. DUDGEON (Sunderland) moved that the financial statement be accepted,

and that there be a strong instruction to the Secretary to keep members in arrear thoroughly well informed. Mr. MOORE seconded, and this also was carried.

Mr. A. HUNTER, in the absence of Mr. Henry Hunter, moved that the sum of £10 10s. be given from the funds of the Association to the Jubilee Memorial. Mr. DUDGEON seconded, and the motion was carried unanimously.

Mr. DUDGEON raised the question of contributing to the Walley Memorial, and gave notice that at the next meeting he would move that £5 5s. be given from the funds of the Association to the Walley Testimonial Fund.

Presidential Address.

Mr. G. ELPHICK, M.R.C.V.S., said:—Gentlemen,—First of all, I wish to return my sincere thanks for the honour which you have conferred upon me by electing me your president for the ensuing year. Still, I cannot help expressing my extreme regret that our worthy and esteemed professional brother, Mr. Chivas, could not see his way to occupy the presidential chair. I am confident that he would have done honour both to himself and to this Association. I am sure you will all agree with me when I say it would be impossible to find a more honourable and hard-working man in the profession than Mr. Chivas. I believe that it was on account of his extensive practice in the country that he was compelled to decline the honour which it was our wish to confer upon him.

Having expressed my regret, I cannot refrain from saying how pleased I am that I should have the honour of occupying this chair to-day, more especially as it is the 25th anniversary of my obtaining my diploma and coming to Newcastle. To those who were instrumental in my coming to Newcastle I take this opportunity of returning my most sincere thanks. I allude to a college friend, Dan McLean, who has long since joined the big majority; to Principal Williams, and Mr. Clement Stephenson. Three truer friends it would be impossible for any man to have. No one has done more for this Association, also for the profession, than Principal Williams, who has always been ready to lend a helping hand—giving advice, professional and otherwise; reading papers, not only for our benefit, but indirectly for the benefit of the public. To no man do the profession and public owe a greater debt of gratitude, for to him is due the credit of the more humane and successful treatment of chest affections and other allied diseases.

To Mr. Stephenson I cannot find words to express my gratitude for his great kindness to me. He has always been a true and kind friend, and to him I give the credit for the position I now occupy in the profession. To have such a gentleman for a predecessor is an undeniable honour.

During the past twenty-five years many and great changes have taken place both in the profession and in this Association. I have no recollection as to when this Association was first inaugurated, but well do I remember attending one of the meetings shortly after I came to Newcastle. Our worthy and esteemed friend, Mr. Brydon, of Seaham Harbour, on that occasion occupied the chair, and Mr. Meikle, of Sunderland, acted as Secretary. On the expiration of their year of office, from some unknown cause, the Association ceased to exist, or, I should say, went to sleep, and slept soundly for eight or nine years, and would, I am afraid, still have been asleep, had it not been for one of the best and most honourable men that ever entered the profession, namely, Mr. David Dudgeon, of Sunderland. To him we owe the position in which this Association now stands. I am extremely sorry to say that it is his health which debars him from being with us to-day. It hardly seems like our annual meeting without him, but although not here personally, I am sure his heart is with us, wishing us every success. Gentlemen, nothing would give me greater pleasure than

seeing the degree of Honorary Associate of the Royal College of Veterinary Surgeons conferred upon our honourable friend, an honour which I think he richly deserves.

Twenty-five years ago contagious diseases amongst animals were allowed to go almost free, causing untold loss amongst our flocks and herds. Most, if not all of them, were then believed by the public to be indigenous to the country, or caused by travelling or exposure. After a great deal of agitation by the profession, agriculturists have learned to believe that all these diseases are preventable. Through the Contagious Diseases (Animals) Act, and the aid of the veterinary surgeon, most of these diseases have been stamped out. Still there are other contagious diseases lingering in our midst, viz., swine fever, glanders, tuberculosis, etc. If I may be allowed to make use of the expression, it is a disgrace to the Agricultural Department of the Privy Council that these diseases still exist. I allude more particularly to their *modus operandi* in trying to stamp out swine fever. What have they done? Simply nothing, and yet, not exactly nothing, but worse than nothing; for if they had done nothing they would have been just as far forward as they now are, without the great expenditure. Instead of getting in front of the disease and stamping it out, they have walked quietly in its rear, paying heavy compensation and giving employment to the sons of a great many of their supporters, or those who have worked for successful parliamentary candidates. It is not long since a gentleman remarked to me that he could not understand how it was that the son of Mr. So-and-so had been appointed an inspector. "Why," he remarked, "he knows nothing about contagious diseases of animals. He is such a dummy he could not earn ten bob a week if he tried." I believe this is a fair sample of the men employed to stamp out swine fever. What the Government ought to have done was to employ members of the profession to assist them, especially those they have discharged who had acted as port inspectors for many years, and who had spent the best days of their lives in that capacity; men thoroughly conversant with contagious and infectious diseases. These gentlemen, I believe, were discharged to keep down expenses, consequently depriving them of a living. In my opinion, to get rid of the disease four things are necessary: (1) All pigs should be registered; (2) no pig should be moved without a license; (3) all pigs exposed for sale in any market, fair, or auction mart should be branded and slaughtered within three days; (4) employment of veterinary surgeons as inspectors. I believe if these regulations were carried out swine fever would cease to exist in six months, or probably less.

With regard to glanders, I think a higher compensation should be paid, and that it should be made a penal offence if the disease is not reported. A disease so fatal to man should be treated with the utmost rigour.

Tuberculosis should be included in the Contagious Diseases (Animals) Act. However, I am afraid it will be some time before this is done, as vested interests will weigh very heavily against it. We all know that very few of our pedigree herds are free from the disease, and what a row the owners would kick np if their herds were put into quarantine, and an attempt made to stamp out the disease. But this should, I consider, only be a secondary consideration; our great aim should be to stamp out a preventable disease, and so assist in saving the ljves of thousands of human beings who die annually from tubercclosis. Professor Nocard states in his book on Animal Tuberculosis, translated by Dr. H. Scurfield, of Sunderland, "that in Paris, according to the latest statistics, more than 23 per cent. of the deaths were due to tuberculosis, and even this high percentage is exceeded in many European towns." This statement should receive the serious consideration of every human being. We all know what would happen if a wild beast was

suddenly to appear in our midst. We should all fly to a place of safety, and adopt every possible means to destroy the animal. But with tuberculosis we do nothing except destroy an occasional carcase, if our meat inspector should be fortunate enough to come across a case But this is not often, as the carcases are generally smuggled away, passed through the sausage machine, to be converted into bags of mystery and food for human comsumption. To give you an idea how prevalent the disease is in this country, I take the following quotation from Professor Nocard's work: "In England, the inspection of abattoirs is still in a rudimentary state; it is, however, from that country that we get the most valuable statistics. It is well known what admirable energy the English have expended in order to stamp out contagious pleuro-pneumonia. Their Act of 1890 orders the slaughter, not only of the sick and suspected, but also of all the animals that have been in contact with the sick. In 1891 there were thus slaughtered, in different parts of England and Scotland, nearly 10,000 animals (of which only 800 were sick). *Post-mortems* were made on these 10,000 animals, and 1,260 were tuberculous, or 12½ per cent. In 1892 the operation was continued, but was brought to bear on much smaller numbers, pleuro-pneumonia being on the decrease. However, there were slaughtered 3,600 animals (of which 134 were sick), and of this number nearly 800 were tuberculous, or 22 per cent. This high proportion is due to the fact that the slaughtering operations were brought to bear on some of the most crowded and anciently infected cowhouses in London, some of which had as many as 50, 60, and 70 per cent. of their cows tuberculous." These statistics speak for themselves, and prove most conclusively that it is time active measures should be taken to stamp out the disease.

Professor Nocard says, in his introduction to Animal Tuberculosis, "Although tuberculosis can be transmitted to all the domestic animals by inoculation, it does not by any means, under natural conditions, cause equal ravages in each species. Cattle come first among its victims, the proportion attacked varying according to the locality. In some places the number of tuberculous cattle is calculated at 10, 15, and 25 per cent. of the whole. In other places the disease is unknown, nevertheless one would be right in saying that bovine tuberculosis is the contagious disease which exacts the heaviest tribute from agriculture, and it is this form of tuberculosis alone at which French sanitary law takes aim, seeing that the other tuberculoses do not constitute a great danger either to property or to public health.

"Horses may be infected under the ordinary conditions of their keeping, and in the horse the disease appears to run a more rapid course and become generalised more easily than in the cow, but still one is justified in saying that equine tuberculosis, although the cases of it recorded up to date are fairly numerous, is an exceptional thing.

"Among the small ruminants the disease is much rarer still, the sheep and the goat being even markedly refractory to experimental inoculation.

"Tuberculosis of the pig is much rarer than that of cattle, but much more common than that of the horse, sheep, or goat, and is, moreover, often generalised in all the organs.

"The domestic carnivora do not show a great susceptibility to tuberculosis, at any rate they are very refractory to the different methods of experimental inoculation with the exception of intravenous injection. Lately however, a considerable number of instances of dogs becoming tuberculous owing to contact with phthisical people have been recorded. Kittens, too, are, easily infected by the injection of tuberculous material, particularly milk.

"Among the birds of the poultry yard, fowls, pigeons, ducks, turkeys, pheasants, etc., the disease is very common, and often assumes an epidemic character.

"The rabbit and the guinea-pig are very rarely tuberculous under natural conditions, but they are, especially the guinea-pig, excellent re-agents for the disease. In them it follows a much more rapid course than in the larger species of animals. This allows many experiments to be completed in a short time, and explains the considerable progress that has lately been made in the study of tuberculosis."

I think a modified form of isolation and stamping out could be adopted without any very great hardship to the owner, and which would ultimately be to his advantage. With this end in view I cannot do better than read to you the translator's appendix to Professor Nocard's book:—

"The object of Professor Bang's scheme is to gradually eliminate tuberculosis from a herd of cattle without having recourse to the heroic method of destroying all the affected animals, and a description of the scheme was given by him to the Society of Danish Veterinary Surgeons in June, 1894, and to the Congress of Hygiene at Buda-Pesth in 1894.

"The scheme is based on the facts that contagion plays the principal part in the spread of bovine tuberculosis, that the calves of tuberculous cows are almost invariably born healthy, and that tuberculin is a most reliable agent for the detection of the disease.

"To begin with, the whole herd is tested with tuberculin, and thus divided into a healthy and tuberculous section.

"The two sections are then separated from one another, and have separate attendants. The healthy section is tested every six months with tuberculin, and any animals which re-act are at once removed to the tuberculous section.

"Those animals of the tuberculous section which are obviously affected are got rid of; but those which are apparently healthy are kept and used for breeding purposes as long as may be convenient, and, as they will generally be fattened for slaughter before the disease is far advanced, the total condemnation of their carcases as butcher-meat will not as a rule be necessary.

"The calves of the tuberculous section are removed to the healthy section immediately after birth, and are fed on the first day on colostrum which has been heated to 65°C., and subsequently on boiled milk.

"At first, these calves are kept in separate boxes, and only added to the sound section when they have successfully undergone the tuberculin test; but Bang thinks now that they may with safety be removed to the sound section immediately after birth, and wait till the time of the general half-yearly testing to undergo the trial with tuberculin.

"The following is a brief account of the results obtained by Bang at the farm of Thurebylille, in Zealand:

"In May, 1892, the entire herd, consisting of 208 animals, were tested with tuberculin. Although the animals seemed healthy, and there had been no special account of infection suspected, 80 per cent. of the milch cows and 40 cent. of the bulls, heifers, and calves re-acted.

"While the herd was out at grass, the two sections being kept apart, the byre was thoroughly disinfected, and divided into two parts by a wooden partition covered on one side by felt. A separate staff was told off to look after each section, with orders not to go from one to the other.

"It was decided to test the healthy section twice a year, and the calves of the tuberculous section as soon after birth as possible.

"In October, 1892, the healthy section consisted of 70 animals, of which seven re-acted and were removed to the tuberculous section.

"In May, 1893, the healthy section consisted of 103 animals, of which ten reacted and were removed to the tuberculous section. After this the isolation of the two sections was enforced more rigorously.

"In October, 1893, the healthy section consisted of 107 animals, of which one re-acted.

"In May, 1894, the healthy section consisted of 122 animals, of which two re-acted.

"In October, 1894, the healthy section consisted of 119 animals, of which one was suspicious.

"In May, 1895, the healthy section consisted of 136 animals, of which none re-acted. The tuberculous section at this time consisted of 69 animals.

"The few animals bought during these three years were tested with tuberculin before being introduced into the herd.

"Most of the calves born during this period were the calves of tuberculous cows, but none of them have developed tuberculosis, with the exception, perhaps, of one calf, which, when tested at the age of six-and-a-half weeks, in November, 1894, gave a re-action.

"These results seem to show that a healthy stock may be bred from a tuberculous stock by the simple precautions of separating the healthy from the infected animals, and boiling the milk of the tuberculous cows."

If these results are correct, and similar measures are adopted in this country, I see no reason why bovine tuberculosis should not be stamped out.

I will now say a few words about our profession. It is about twenty-six years since the matriculation examination was first made compulsory. The educational standard has been gradually increased, until we now demand from our students an examination equal to that of the medical profession; and although this examination may, for a time, restrict the number of students attending the different schools, yet I have not the slightest hesitation in saying that the schools will eventually be rewarded for this higher standard of education.

I am sorry a misunderstanding has arisen amongst the members of Council upon this educational question. Some maintain that a student is entitled to registration with a divided certificate; others that the examination should be passed at one sitting. The General Medical Council will not accept divided certificates, and I am of opinion that, according to the Bye-laws of the Royal College of Veterinary Surgeons, no student can be registered with a divided certificate. I have submitted the first schedule to competent persons—head masters of schools—for their opinion, and they tell me that a student, to qualify himself for registration, must pass in all subjects at one examination. As a member of Council, I must tell you that I have always voted against the divided certificate, and shall continue to do so.

In looking back over the past history of the Association, I notice that it has always been the unanimous opinion of its members that the standard of education of our students should be on a par with that of other professions, especially the sister profession. Now that this standard has been attained, I hope you will still be unanimous that it should continue to be so.

The curriculum has gradually been extended, the subjects being increased, and a higher percentage of marks demanded. This can have only a good effect, since it will make only a more efficient veterinary surgeon and raise the profession in the estimation of the public. With regard to the professional examinations, I think that Bye-law 59 should be altered. I consider the time at which the examination is to be held this year is most inconvenient to those who have pupils. Just when you want them most they are taken back to college, not to return until the end of July, when you want them least. July, August, and September are generally the quietest months of the year. I think it would be a great advantage to all concerned if the schools could be persuaded to commence the session at the beginning of September. and hold the examinations in December and the beginning of April. This would enable the student to join the practitioner at the busiest time of the year, and he would then have a better opportunity of obtaining practical knowledge.

During the last few years a great deal has been done to protect the interests of the profession. As a member of the Registration Committee, I can say, without fear of contradiction, that we have worked very hard, and, I believe, done a great deal for the good of the profession. All cases which have been brought under our notice have been thoroughly investigated, and received our most serious consideration, with the result that a complete stop has been put upon unprofessional advertising, encroachments upon our rights by unqualified practitioners and patent medicine vendors. Still a great deal more remains to be done ; I allude more especially to the teaching of veterinary science, and the granting of certificates by the different colleges and schools of science and art. Already many of these certificate holders are practising as veterinary surgeons, and exhibiting these certificates to show that they are qualified to do so. I am sorry to say that their certificates are generally signed by members of the profession, who, I am afraid, can have very little regard for the interests of the profession, or they would never lend themselves to such a movement. I think if the College acts with firmness, and demonstrates to these colleges and schools the injustice they are doing to the profession, they will cease to grant these certificates. If they do not cease granting these certificates, every legitimate means in our power must be brought to bear upon them, to compel them to do so, and I shall strongly support any movement in this direction, and any trouble I may be put to I will consider to be a duty I owe to the profession.

Mr. DUDGEON introduced the subject of representation to the Council of the Royal College of Veterinary Surgeons. He said that Association had generally taken a very active part in returning members of Council, and he found that they had two retiring members, the President and Mr. Henry Hunter. They had now been three years on the Council, and if they were agreeable, his motion would take the form of proposing that the usual steps be taken to secure their return. Perhaps it would be as well if those gentlemen would favour them with a little account of their stewardship, and of what they were going to do. The president had touched on the education question, and he fancied a good deal more was going to come out of that question than they at first thought.

The PRESIDENT said they all knew pretty well his views with regard to what had taken place and what was about to take place in the Council of the College. In his address he thought he stated pretty clearly what his opinions were and what had been done. He had attended as regularly as he possibly could, and had always studied the best interests of the profession. If it should be their wish that he should stand again as their nominee, he should continue to act in the future as he had done in the past.

Mr. HENRY HUNTER said he perhaps stood in a somewhat different position from Mr. Elphick, seeing that he had determined not to be nominated again, simply for the reason that he thought, unless anyone could go there fully prepared to devote continuous attention to the duties of the Council, they should not go at all, because he found that perhaps the thing which one had gone to one meeting to advocate, had been reversed at the next. There had been a divided opinion in the Council with reference to the education question, and he did not agree that the preliminary examination should be absolutely passed at one examination. He considered that if that examination were passed even in two or three sections it was a certain guarantee that the student had acquired sufficient knowledge to become a member of the profession. That he believed was the feeling of the majority of the Council, but he was not at all quite sure that it was quite in agreement with the Charter. He believed it had been decided that it was absolutely necessary that it should be passed at one examination.

Mr. W. HUNTING, ex-president of the College, said they were still undecided.

Mr. H. HUNTER thought they were going a bit too fast and he thought it was a great hardship to a student who had passed a certain proportion of the subject that he should not be entitled to admission.

Mr. DUDGEON asked if they had to understand that Mr. Hunter would not run again for the Council ?

Mr. HUNTER said that was so. His time would be fully occupied for the next twelve months at least.

Professor WILLIAMS said he quite agreed with Mr. Hunter. He thought there was some misconception about the medical profession requiring an educational certificate to be obtained at one time. They took a leading certificate, and those could only be passed in sections. The University of Edinboro' said that a candidate should pass all the subjects at one sitting for the purpose of registration. They had no registration in the veterinary profession until a man had got his diploma, and therefore the circumstances were quite different from what they were in the medical profession. Students could not do it at one sitting ; it was quite an impossibility. If a man was required to do that after getting his diploma, it would be quite different. He should support any man who went for the passing of the preliminary in sections.

The SECRETARY read a letter from the Midland Counties Association enclosing the following resoiution, which had been passed :—" That in the opinion of the Midland Counties Veterinary Medical Association the higher standard of preliminary examination should be maintained and that all the subjects be passed at one sitting as in the medical profession ; we pledge ourselves to support only those candidates who are prepared to vote in accordance with this view."

The SECRETARY read a letter from Mr. Awde on behalf of the South Durham and North Yorkshire Associotion advocating the election of Mr. Peele to the Council and expressing the view that provincial veterinary surgeons were still unduly represented on the Council.

Mr. PEELE said he quite agreed with the President that the student should pass the preliminary examination at one time.

Mr. HUNTING said it was probable that at the next election the whole thing would turn upon ihe education question. It was quite an open question, and the bye-laws at present were differently interpreted by two sections of the Council. The result of this was, that at the last Council meeting five members resigned with a view to offering themselves for re-election in a group. Some three or four years ago the Council decided to raise the matriculation examination, and, by way of avoiding another examination of their own, they agreed to accept certificates from different educational bodies in England, Scotland, or Ireland. The certificates those bodies gave were now in the bye-laws of the R.C.V.S., and were copied verbatim from the list given by the General Medical Council, the only difference being that the General Medical Council prefixed theirs by a list of the subjects required. The medical profession had also a rule to the effect that all the subjects must be passed at one time. The present bye-laws were revised and passed in June, 1895, so that whatever took place before that there was no doubt they were now bound by the existing rules. In 1894, when he was president, he was asked by the Secretary whether they ought to accept those certificates if the subjects were not all passed at once. His reply was that they must follow the bye-laws. His private opinion was that if a medical student could pass any examination, a veterinary student could do it, and should, but that question is open and now before the profession. The five gentlemen who had resigned would no doubt run together for what they called the higher education, but they were assuming a position they had no right to. They

wanted to pose as the only men who wished to maintain the educational standard.

Mr. H. HUNTER thought they were all agreed as to the higher education, but the question was, whether it was any higher for being passed at one examination or in sections.

Mr. WILLIAM HUNTER said his view was that he would go in for the higher education.

Professor WILLIAMS objected to the term, higher education. They all wanted the certificates to be of the same value, but they objected to a man being compelled to pass it at one sitting. He had no hesitation in saying that a man would be better for passing his examination in sections, as he then had more time for each subject.

Mr. WILLIAM HUNTER said he would like to keep up to the medical profession. If medical students passed this examination at once, why should not their men do the same?

Mr. DUDGEON said a great deal of the discussion seemed to be between tweedledum and tweedledee. It was a very hard case for a student who failed in one subject, but they must draw the line somewhere, for a man might fail in three, six, or even eight subjects.

The PRESIDENT said, to test the meeting, he would propose the following motion: "That the members of this Association approve of the higher education for entrance to the veterinary schools being maintained, and protest against any lowering of the educational requirements."

Mr. A. HUNTER said they all agreed with that. They wanted to test the question of whether the thing should be in sections or otherwise.

Professor WILLIAMS agreed with Mr. Dudgeon that it would be a hardship if a man failed in one or two subjects. It would be a hardship on the other side if a man were allowed a certificate for only passing in one or two subjects. He saw no difficulty; it was only a matter of detail. What he objected to was a hard and fast line to have the examinations passed all at one time.

Mr. MITCHELL moved the following resolution: "That this meeting is of opinion that the veterinary matriculation examination should not be inferior to that of the medical profession."

On the suggestion of Mr. DUDGEON, Mr. MITCHELL agreed to add to this motion the words "And should be passed in the same manner."

Mr. A. HUNTER moved as an amendment: "That the standard of education be equal to that of the medical profession, but that it be not imperative to pass all the subjects at once."

Mr. H. HUNTER seconded.

The amendment was put to the meeting and lost.

On the motion of Mr. MOORE, seconded by Mr. DUDGEON, it was agreed that the next meeting should be held in Durham.

On the motion of Mr. DUDGEON, it was agreed that the Association should support the candidature of Mr. Elphick for the Council, and should again agree with the South Durham and North Yorkshire Associations in supporting Mr. Peele.

The PRESIDENT expressed his sorrow that time would not permit them to hear the paper which Professor Williams had promised to read.

On the motion of Mr. PEELE, a hearty vote of thanks was passed to the President for his able and interesting address.

On the motion of Mr. MOORE, a vote of thanks was passed to Professor Williams for having kindly consented to come and read a paper.

The meeting then ended.

WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE Thirteenth Annual General Meeting of this Association was held at the New London Hotel, Exeter, on Thursday, April 23rd, Mr. C. H. Golledge, the President, occupying the chair. Others also present were Messrs. H. P. Chase, Tiverton; W. Penhale, Barnstaple; A. T. Down, Sampford Peverill; W. H. Bloye, Plymouth; C. W. Howard, Exmouth; J. Dunstan, St. Mellion, Cornwall; F. E. Place, Honiton; G. W. M. Haydon, Midsomer Norton; J. P. Heath and W. B. Nelder, Exeter. Visitors: Professor Penberthy, Mr. J. A. Collings and Veterinary-Captain Killick.

Apologies for non-attendance were received from Messrs. Olver, Elder, Gibbings, Penhale (Holsworthy), and Oliver.

The minutes of the last meeting were read and confirmed.

Professor Macqueen's Scheme.

The circular letter from Professor Macqueen was read, *re* the amalgamation of the local associations with the National. It was proposed by Mr. BLOYE, and seconded by Mr. PENHALE, that a committee be formed to communicate with Professor Macqueen, and Messrs. C. H. Golledge, Bloye, Penhale, and the Secretary were elected.

Walley Memorial Fund.

It was proposed by Mr. PENHALE, and seconded by Mr. BLOYE, that a sum of five guineas be subscribed towards the above fund.

Satisfactory reports were presented by the Hon. Secretary and Treasurer, and were eventually adopted.

Election of Officers.

On the motion of Mr. PENHALE, seconded by Mr. HEATH, Mr. Chase was unanimously elected President for the ensuing year.

Messrs. J. P. Heath, C. Parsons, W. Penhale, T. Olver, G. H. Elder, W. H. Bloye, and C. H. Golledge. vice-presidents.

On the motion of Mr. BLOYE, seconded by Mr. HAYDON, Mr. Nelder was re-elected Secretary and Treasurer.

On the motion of Messrs. CHASE and BLOYE, it was decided to hold the next meeting at Exeter.

Mr. F. E. PEACE, M.R.C.V,S., Honiton, now read a paper on "Meat, Milk, and Public Health, from a veterinary standpoint":—

Mr. President and Gentlemen,—When I received your invitation, I felt that as a comparatively young member of the Association, I should be, by accepting that invitation, taking upon myself a task which I should find myself unable to satisfactorily carry out; but on the principle of "what man can do I can do," I never like to refuse a task, in the failure to perform which, I may learn how to do better in my next attempt. As the choice of subjects lay with me, I thought that this one would be suitable for the consideration and discussion of this Association, and my reasons for choosing it were perhaps somewhat of a personal nature. namely, that I am a member of the Sanitary Inspectors Association and hold office as a sanitary inspector under the Local Government Board. But although to a certain extent I must pose before you as a sanitary inspector, I am a veterinary surgeon first and a sanitary inspector second, and I trust that in the course of this paper I shall show to you that a veterinary surgeon is a person much better fitted to deal with this question than is the sanitary inspector. In fact at the present stage of our professional existence it becomes a point of vital interest to the profession whether we shall submit to the supervision of meat and milk being placed in the hands of men who receive a very scanty training for the post, and whose knowledge of

the subject is of necessity very superficial. I hold that the time has fully arrived for the Royal College of Veterinary Surgeons to claim for its members a right, and not to stand by supinely and allow associotions such as the Sanitary Institute to arrogate to themselves powers which every common-sense person can see belong to us. In the various journals published for the benefit of sanitary inspectors I constantly see that such and such a body has paid a visit to such and such a slaughter-house and been taught the difference between sound and unsound meat and so forth. Or again that Mr. So-and-so, the sanitary inspector, has conducted a case against So-and-so the butcher for exposing meat unfit for human food, and that the case was supported by the medical officer of health and won easily, although for the defence expert evidence both medical and veterinary was called; in fact these cases bear a strong resemblance to many of the cases of the prosecution instituted by the Royal Society for Prevention of Cruelty to Animals, or that for the Prevention of Cruelty to Children, *i.e.*, where an inspector with a very slight knowledge of his subject, and a little biassed expert evidence to back him up, are all that are necessary to gain a case. Expert evidence for the defence is not dressed up in a little brief authority, and is therefore, to put it plainly, a pack of lies. Of course, I don't make a wholesale condemnation of every sanitary inspector, but I do maintain that if men whose daily occupation brings them in contact with animals, both sound and diseased, were in a position to take the case in hand, the truth would be arrived at sooner and the public health conserved the better.

In all the legislation on behalf of the public health I know of only two references to the veterinary surgeon. one of which occurs in the Infectious Diseases (Prevention) Act, 1890, and the other in the Destruction of Injured Animals' Act, 1892. With the latter we are familiar, with the former you may not be so familiar. The gist of the reference is that if the Medical Officer of Health think that the cows of a dairy are producing scarlet fever, or anything else, he shall be accompanied by a veterinary surgeon on his inspection. Of course so long as the public associate the veterinary surgeon with the man who cleans out the pigstyes, it will be utterly hopeless for us as a profession to try and take our position as co-officers with the medical officer of health, but if we individually treat those with whom we come in contact in such a manner that they realise that we are men of education and men of special training, then each of us may become a nidus of public opinion, the growth of which will enable us to take our proper position. It is not my intention in this paper to go into details of pathology and microscopy, but to roughly give you the outlines of the legislation on the subject of meat and milk, in the execution of which we, as a body, take no part, but in which we ought to be the executive officers.

To commence with the subject of meat. Walley, who undoubtedly was our pioneer in putting our claims before the public, and whose book on meat inspection is accepted as a standard text-book by sanitary examination boards, asked in 1879, "Is the inspection of meat in proper hands?" and in answer to his question, said in the great majority of instances inspectors of meat are chosen from butchers, farmers, or those employed officially in some capacity about slaughterhouses, any doubts which may exist as to the sanitary or unsanitary condition of meat being usually referred to the medical officer of health for solution; and while I am free to confess that many inspectors who know nothing whatever of disease, attain in the course of time to a vast amount of practical knowledge and sound tact, there are very many who are absolutely ignorant of the rules necessary to guide them in their work.

Medical men, some of whom be it said to their honour, do not dabble in matters which they do not understand, are ill qualified to judge of the fitness

or unfitness of animal flesh for human consumption, for they are in the great majority of instances totally unacquainted with the characteristics of the animal diseases and the effects of any particular malady upon the tissues of the body. Veterinary surgeons, as they are trained at the present day, are in my opinion the proper consultants as to the condition of flesh from animals that have suffered from any pronounced form of disease. I have frequently since that time directed attention to the anomalous manner under which the inspection of meat is carried on in this country, inasmuch as it is largely entrusted to individuals who have no special training to fit them for the office they have to perform, and who have no knowledge of the nature of the disease or of its effect upon animals, or—through them upon man. Lay inspectors are of the greatest possible use, and their services cannot be dispensed with, but their functions should be more those of detectives than of experts, and I am quite satisfied that a greater measure of justice would be meted out to all parties concerned, if lay inspectors of abattoirs and markets are instructed to seize and retain carcases and organs of diseased animals, and submit them to the inspection of a competent Sanitary Board, whose decision as to the disposal thereof shall be final. The composition of this Sanitary Board, should, in all equity and reasonableness, be the medical officer of health, the veterinary surgeon and the senior inspector of markets and slaughterhouses. I may say that in the matter of legislation on this subject, England is decidedly behind Scotland, for here we have no provision of appeal for repeal to a veterinary expert, whereas in all the larger Scottish cities special arrangement is made and such an officer specially appointed.

Sale of Meat.

The following are the sections of the various Public Health Acts which deal with meat—"Any Medical Officer of Health, or Inspector of Nuisances may at all reasonable times inspect and examine any animal, carcase, or flesh exposed for sale or deposited in any place for the purpose of sale or of preparation for sale, and intended for the food of man, the proof that the same was not intended for the food of man, resting with the party charged, and if such animal carcase, meat or flesh, appears to such medical officer or inspector to be diseased, or unsound, or unwholesome, or unfit for the food of man, he may seize or carry away the same himself, or by an assistant, in order to have the same dealt with by a justice. If it appears to the justice that any animal carcase, etc., so seized, was unsound, or unwholesome, or unfit for the food of man, he shall condemn the same, and order it to be destroyed or so disposed of as to prevent it from being exposed for sale, or used for the food of man, and the person to whom the same belongs, or did belong at the time of the exposure for sale, or in whose possession, or on whose premises the same was found, shall be liable to a penalty not exceeding £20 for every animal carcase, etc., so condemned, or at the discretion of the justice, without the infliction of a fine, to imprisonment for a term of not more than three months. The justice, who under this section is empowered to convict the offenders, may be either a justice who may have ordered the article to be disposed of, or destroyed, or any other justice having jurisdiction in the place. Any person who in any manner prevents any medical officer of health or sanitary inspector from entering on the premises and inspecting any animal, etc., or who obstructs and impedes any such officer or his assistant, shall be liable to a penalty not exceeding £5. On complaint by oath by medical officer of health or inspector of nuisances, or other officer of a local authority, any justice may grant a warrant to any such officer to enter any building or part of a building in which such officer has reason for believing that there is kept or sold any animal, etc., unfit for the food of man, to search for, seize, or carry away any such animal or other article in order to

have the same dealt with by a justice under the provisions of this Act. Any persons obstructing any such officer in the performance of his duty if under such warrant shall, in addition to any other punishment to which he may be subject, be liable to a penalty not exceeding £20."

"Sections 116 to 119 of the Public Health Act, 1875, relating to unsound meat shall extend and apply to all articles intended for the food of man, sold or exposed in any place for the purpose of sale or of preparation for sale within the district of any local authority."

The Public Health Act of 1890 confirms and extends the powers of the medical officer of health and sanitary inspector, and also arranges that such carcase, etc., may be removed as if it were trade refuse. This latter clause takes away the ground of common defence that the food seized had been set aside to await the inspector's visit before offering it for sale. It is important that any seizure should be made before sale, as cases which have been carried up to the higher courts where the seizure had been made after sale, have ended in the discomfiture of the medical officer of health and the sanitary inspector. Also it is better for a sanitary inspector when issuing the summons to rely simply on the fact of the meat being diseased or unsound, and not to say anything about it being unfit for human food, because the defence will always find some witness or witnesses who are willing to swear that they should relish nothing more than a grill off the carcase in question, while they are perfectly ready to admit that it is diseased and unsound. There are scores of other legal quibbles which I should advise any veterinary surgeon engaged on a case to become acquainted with, but which are outside the scope of this paper. I cannot refrain from giving a list of the diseases of animals which are declared by no less authority than Dr. F. Vacher to render meat unfit for the food of man. This is the list:—Cattle plague, pleuro-pneumonia, sheep-pox, cow-pox, influenza, rheumatism, quarter evil, braxy, swine fever, scarlatina, quinsy, anthrax, encysted parasites, trichinea and tuberculosis. This list will raise a smile on the usually sedate countenance of any veterinary surgeon, and will lead him to think "I may not be up to much, but I could go one better than that!" The following are the characteristics which sanitary inspectors are taught belong to good meat. First, it is neither of a pale pink colour, nor of deep purple tint, for the former is a sign of disease, and the latter indicates that the animal has not been slaughtered but has died with the blood in it. Second, it has a marbled appearance, from ramification of little veins of fat among the muscles. Third, it should be firm and elastic to the touch, and should scarcely moisten the fingers, bad meat being wet, sodden, and flabby, with the fat-like jelly or wet parchment. Fourth, it should have little or no odour, and the odour should not be disagreeable, for diseased meat has a sickly, cadaverous smell, and sometimes the smell of physic. This may be discovered by chopping it up and soaking it in hot water. Fifth, it should not run to water or become very wet on standing, but on the contrary should dry upon the surface. Such is Dr. Letheby's idea of a juicy beef steak or a well-hung leg of mutton.

From the butcher's shop to the slaughterhouse is but a step and the veterinary surgeon is much more at home in the slaughterhouse than in the shop, and again I must quote from Walley: "The inspection of live animals exposed for sale for the purpose of human food is on a very unsatisfactory footing. I have constantly directed attention to this matter for years past, but hitherto my efforts have not been rewarded. Every year thousands of animals obviously diseased are exposed in public for sale for human food and no person possesses the power, at any rate in Scotland, to prevent them being sold for this purpose; and as has already been shown the powers possessed by medical officers of health and inspectors of nuisances in England are not

exercised. Every inspector should be invested with the powers of seizing live animals that are obviously unfit for human food, whether caused by disease or poverty, and in the absence of the veterinary inspector, other officers, such as market inspectors or market constables, should be empowered to take charge of and detain such animals until he arrives. I would specially plead before you for the necessity of the abolition of the private slaughter-houses and for the substitution of the public abattoir. As inspector of slaughter-houses in a borough which has no public abattoir but many private slaughterhouses, I can say that it is practically impossible to inspect the animals brought in for slaughter, aud almost equally impossible to find out whether the carcases are healthy or otherwise; for the animals are taken in under the cover of darkness, slaughtered, dressed, and cut up before the inspector hears of their arrival; and often sold without the slightest protection to the public. I consider it highly necessary that local authorities should, as occasions present themselves, use the powers they possess to refuse the granting of licenses to private slaughterhouses; for the public abattoir would afford ample means for inspecting the animals brought to be slaughtered, and also greater conveniences to the butchers and greater cleanliness in the preparation of the carcases for food."

Regulation of Slaughterhouses.

It is enacted by section 159 of the Public Health Act, 1875, that to enable urban authorities to regulate slaughterhouses within their district, the provisions of the Towns Improvement Clauses Act of 1847 shall be incorporated with the Public Health Act. The incorporated provisions are as follows: "The urban sanitary authority shall from time to time, by bye-laws, make regulations for the licensing, registering, and inspection of slaughter-houses, for preventing cruelty therein, for keeping the same in a clean and proper state, and for removing filth once in every 24 hours, and requiring them to be provided with a sufficient supply of water, and for the imposition of penalties not exceeding £5 for breaking the bye-laws, and for a continuing offence 10s. for every day the offence is continued after conviction for the first offence." Section 129 provides that "Justices before whom any person is convicted of killing or dressing any cattle contrary to the provisions of this Act, or of non-observance of any bye-laws or materials in this Act, in addition to any penalty imposed, may suspend the license for a period not exceeding two months, and may forbid for that period the slaughtering of cattle therein, and upon a second and subsequent like offence may revoke the license and forbid absolutely the slaughtering of cattle upon the premises." The Local Government Board has advised the sanitary authorities, before the license for slaughter-houses is granted, that the following rules as to site and structure should influence their decision upon each application for a license:—Firstly, the premises erected or to be erected, or used and kept as a slaughterhouse, should not be within 100 feet of any dwelling-house, and the site should be such as to admit of free ventilation by direct communication with the external air on two sides at least of the slaughterhouse. Secondly—lairs for cattle in the slaughterhouse should not be within 100 feet of a dwelling-house. Thirdly—the slaughterhouse should not be in any part below the surface of any adjoining ground. Fourthly—the approach to a slaughterhouse should not be in any incline of more than one inch in four, and should not be through any dwelling-house or shop. Fifthly—no room or loft should be constructed over the slaughterhouse. Sixthly—the slaughterhouse should be provided with an adequate tank so placed that the bottom shall not be less than six feet above the level of the slaughterhouse floor. Seventhly—the slaughter-houses shall be provided with means of thorough ventilation. Eighthly—the slaughterhouses should be well paved with ashphalte or concrete, and laid

with proper slope or channel towards the gulley, which should be properly trapped and covered with a grating, the bars of which should not be more than three-eighths of an inch apart. Provisions for the effectual drainage of the slaughterhouse should also be made. Ninthly—the surface of the walls in the interior of the slaughterhouse should be covered with hard, smooth, impervious material of sufficient height. Tenthly—No watercloset, privy, or cesspool should be constructed with the slaughterhouse. There should be no direct communication between the slaughterhouses and any stable, watercloset, privy, or cesspool. Eleventhly—every lair for cattle in communication with the slaughterhouse should be properly paved, drained and ventilated. No habitable rooms should be constructed over any lair. The following provisions of the Public Health Act apply to slaughterhouses:—"The owner or occupier of any slaughterhouse licensed or registered under this Act, shall, within one month after the licensing or registering of the premises, affix and show, keep undefaced and legible in some conspicuous places on the premises, the notice, with the word 'licensed slaughterhouse,' or 'registered slaughterhouse,' as the case may be. Any person who makes default in this respect, on requisition in writing from the urban authority, shall be liable to a penalty not exceeding £5. Licenses granted shall be in force for not less than twelve months. Any change of occupation shall be notified to the inspector of nuisances under a penalty not exceeding £5. If the occupier of a building licensed as aforesaid is convicted of selling or exposing any carcase, etc., which is unsound or unfit for the food of man, he shall have his license revoked."

It is disheartening how few towns adopt the foregoing regulations, because there is nothing in them that would interfere with private interests, and their due observance would tend to the preservation of the public health. One word as regards the new method of slaughtering the larger animals for food, namely, Greener's humane cattle killer. I have used this instrument with the most perfect ease and certainty on all kinds of cattle, and butchers who have seen me use it, and who have used it themselves, are loud in their praises of the expedition with which it causes death—would not under any circumstances revert to the poleaxe, with its attendant difficulties and frequent failures. Time forbids me to go into the details of blowing, stuffing, stripping, and other tricks of the trade, all of which would be more easily detected by a veterinary surgeon who has a knowledge of the anatomy and physiology than they would be by a sanitary inspector whose special training has been drain pipes and sewer gas. I will only give a passing notice of horse flesh, which in some of our larger towns is now forming a cheap wholesome food for the poorer classes, and which is specially legislated for by the Horse Flesh Act of 1889, the gist of which is that in the places of sale there must be four-inch letters indicating that horse flesh is sold there cooked or uncooked, alone or mixed with any other substance.

Inspection of Dairies.

With regard to the second part of my subject—milk, who is better fitted to deal with the sanitary aspect of milk than the man who treats the milk producer both in health and disease; but in how many places do we find the veterinary surgeon established as the inspector of dairies? I think that I should be well within the mark if I said not in one per cent. of the towns of Great Britain. The sanitary aspect of milk and its surroundings is dealt with by the Dairies and Cowsheds and Milkshops Order of 1885, the principal provisions of which are:—"First, that it shall not be lawful for any person to carry on in the district of any local authority, the trade of cowkeeper, dairyman, or purveyor of milk unless he is registered therein in accordance with this Order.—Secondly, every local authority shall keep a register of persons

from time to time carrying on in their district the trade of cowkeeper, etc., and shall from time to time revise and correct the register.—Thirdly, the local authority shall register every such person, but the fact of such registering shall not be deemed to authorise such person to keep a dairy or cowshed in any building, or in any way preclude proceedings being taken against any such person for any infringement of the provisions of this Order.—Fourthly, the local authority shall from time to time give public notices by advertising in a newspaper circulating in their district, and if they think fit, by placards, handbills, or otherwise, of registration being required and of the mode of registration. Fifhly—The person who carries on the trade of cowkeeper, etc., for the purpose only of making and selling butter and cheese shall not be deemed a person carrying on the trade of cowkeeper, and need not be registered. Sixthly—A person who sells milk of his own cows in small quantities to his workmen or neighbours for their accommodation need not be registered."

As regards the construction of water supplies at new dairies it shall not be lawful for any cowkeeper to begin to keep as a dairy or cowshed any building not so kept at the commencement of this Order, unless and until he first makes provision to the reasonable satisfaction of the Local Authority for the lighting and the ventilation, including air space, and cleansing, drainage, and water supply of the same, and he must also give a month's notice to the said Authority of his intention to do so. Also it shall not be lawful for any cowkeeper, etc., to keep as a dairy any building if and as long as lighting, ventilation, cleansing, drainage, and water supply are not such as are necessary and proper for the health and good condition of the cattle therein, for the cleanliness of milk vessels, and for the protection of the milk against infection and contamination. Also it shall not be lawful for any cowkeeper, etc., to allow any person suffering from a dangerous or infectious disease, or having recently been in contact with a person so suffering, to milk cows or to handle vessels containing milk, or in any way to take part, or assist in the conduct of the trade as far as regards the production, distribution, and storage of milk. It shall not be lawful for any cowkeeper, etc., after receipt of notice of not less than one month from the local authority calling attention to the provisions of this article, to permit any water-closet, earth closet, cesspool. or urinal to be within, communicating directly with, or ventilating into any dairy or any room used as a milk store. Neither shall he use the milk store as a sleeping apartment, or for any purpose incompatible with the proper preservation of the cleanliness of the milk store and of the milk vessels and the milk therein; and it shall not be lawful for him to keep any swine in any cowshed or milk store. A local authority may from time to time make regulations for the inspection of cattle in the dairies and for regulating the lighting, ventilating, cleanliness, drainage, and water supply of cowsheds, and for securing the cleanliness of milk stores, etc., and for prescribing precautions against contaminations from persons buying and selling milk if at any time disease exists among cattle in a dairy. The milk of a diseased cow shall not be mixed with other milk, it shall not be used or sold for human food, and shall not be used or sold for food of swine or other animals unless and until it has been boiled.

The scarlatina scare at Hendon, that huge exposure of medical ignorance, and fine tribute to veterinary research, resulted in one of the legal references to the veterinary surgeon to which I have already alluded, and with your permission I will quote it :—"In case the medical officer of health is in possession of evidence that any person in the district is suffering from infectious disease attributed to milk supplied within the district from any dairy within or outside the district, or the consumption of milk from such dairy is likely to cause infectious disease to any person residing within the district, such medical

officer shall, if authorised by an order of a justice, have power to inspect such a dairy, and if accompanied by a properly qualified veterinary surgeon to inspect the cattle therein, and if on such inspection the medical officer of health shall be of opinion that infectious disease is caused by the consumption of milk supplied therefrom, he shall report thereon to the local authority, and his report shall be accompanied by a report furnished to him by the veterinary surgeon; and the local authority may thereupon give notice to the dairyman to appear before them within twenty-four hours to show cause why an order should not be made requiring him not to supply any milk therefrom." Then later on in the same Act is the magnanimous provision that the reasonable remuneration of the veterinary surgeon employed under Section 4 shall be paid by the sanitary authority. I can only say that in the borough of Honiton during the last four years the method of surprise visits and short sermons to individuals has had a decidedly beneficial effect on the cleanliness of cowsheds and dairies, although the old custom of using the dairy as the larder dies hard, and dairymen are willing to improve the cowshed and the surroundings of the cowshed before they turn out the pork, and the ale barrel or cider hogshead from the dairy. Little more of general nature can be said with regard to the veterinary legislation respecting cowsheds and dairies, and so I will hasten to the general aspect of the Public Health Acts as they affect our profession.

The Public Health Acts.

According to the model bye-laws of the Local Government Board, the sanitary inspector shall see that the occupier of any premises shall not keep any animal in such a way as to pollute any water used for drinking or domestic purposes, or used in any dairy; he shall also see that every occupier of a building wherein any horse or beast of burden, or cattle or swine may be kept shall provide in communication with such building a suitable receptacle for dung or other offensive matter which may from time to time be produced in the keeping of any such animal; he shall cause such receptacle to be constructed so that the bottom or floor thereof shall not in any case be below the surface of the ground adjoining such receptacle; he shall also cause such receptacle to be constructed so as to prevent any escape of the contents thereof, and to be furnished with a suitable cover; and he shall also see that the drainage is sufficient, and that the dung, etc., be removed at least once a week. Now, I ask, is not a veterinary surgeon better fitted by his training to be an expert in such matters rather than a builder or an architect? With regard to myself, I qualified as a sanitary inspector with a view of helping my profession to assert its authority in this respect, and I am glad to say that many gentlemen are now taking up sanitary work so as to enable them to obtain posts as veterinary medical officer of health both at home and in the colonies, and I would strongly urge the advisability of the Association approaching Red Lion Square with a resolution to the effect that when the time comes legislation should be provided which shall find a place for the veterinary medical officers of health as well as the human, and as a private practitioner and an inspector under a local authority I would strongly recommend that both in the case of the medical officer of health and in the case of the veterinary medical officer of health, or as he stands at present—the veterinary inspector, that sufficient salary should be given which would render them independent of private practice, and that they be debarred from private practice. The veterinary medical officer of health should also act as the inspector under the Contagious Diseases Act, and he should also take the place of the lay inspector of the Board of Agriculture or of the local constabulary, and still find time to do his work thoroughly and cheaply, and I have little hesitation in saying to the much better satisfaction of the sanitary

authorities, of the police authorities, and the Board of Agriculture, than do the nondescript travelling inspectors lay, inspectors under the Contagious Diseases Act, and the other Browns, Joneses, and Robinsons who now step in with that audacity which enables fools to rush in where veterinary angels fear to tread.

I must apologise to you for taking up such a length of time with these disjointed remarks, and crave your pardon for not bringing before you matter better fitted for reflection and discussion, but whilst so apologising I feel that if I have not been able to give you food for mental digestion, I may have been able to throw out a hint or two as to how the veterinary surgeon's exchequer may legitimately be increased, and while thanking you for your attention, and offering my excuses for my long-windedness, I will urge as an excuse for myself the words of the statesman who helped to place England where she is, the words which in his domestic legislation he was so fond of, *Sanitas sanitatum omnia sanitas.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE Quarterly Meeting of the above Association was held at the Grand Hotel, Manchester, on Thursday, March 5th, 1896. Tea at 5 p.m., business at 6 p.m. There were present over twenty members and friends.

Nominations for Membership.

Mr. E. FAULKNER, on behalf of Professor Williams, proposed the election of Captain Hayes, Sandy Brow, Tarporley, the PRESIDENT seconded, and carried unanimously.

Mr. W. A. TAYLOR proposed Mr. F. W. Hall, Mr. FAULKNER seconded, and carried unanimously.

Mr. FAULKNER proposed Mr. Robert Ward, M.R.C.V.S., Store Street, Manchester, and Mr. Peter Gillespie, M.R.C.V.S., Crescent, Salford, as members of the Association.

The SECRETARY read a telegram received from the Royal Counties Association.

Mr. FAULKNER presumed the telegram had reference to the coming election of Council R.C.V.S. If the L.V.M.A. could see its way in addition to having its own nominee to assist Mr. Simpson in his candidature, it would reflect credit upon the Association.

The PRESIDENT said he could endorse every word Mr. Faulkner had said. The L.V.M.A., as provincial veterinary surgeons, should certainly support the candidature of Mr. Simpson.

Mr. ALEC LAWSON said he was the retiring Member of Council who had represented the Association. He should be very pleased if the members would take his candidature into consideration again. At the same time, he had no desire to remain a candidate of the Association if there were any more suitable to represent the Association than he was.

Mr. FAULKNER said he would be very glad to move that Mr. Lawson be the nominee of the L.V.M.A., at the forthcoming Election of Council. With regard to Mr. Simpson, it was not put forward that he should be the nominee of this Association, but that the members should be asked to vote for him.

Mr. W. A. TAYLOR seconded Mr. Faulkner's proposal that Mr. Alec Lawson be the nominee at the forthcoming Election of Council of the R.C.V.S.

Mr. FAULKNER moved that the Election Committee be the usual one, consisting of the officers of the Association, with power to add.

Mr. LAITHWOOD seconded. The proposition was carried unanimously.

Consideration of Professor Macqueen's Letter re Veterinary Combination.

The PRESIDENT looked upon Professor Macqueen's suggestion as one of

great importance, and well worthy of careful consideration by the Association. There was no doubt that by this combination of the local societies, it would be a means of very materially strengthening the National, of putting it on a firm basis which it had never hitherto experienced.

Mr. FAULKNER, touching upon Professor Macqueen's letter respecting veterinary combination, said he thought the object was to have a council which would be really and truly representative of the whole profession by federating the existing veterinary medical associations.

Mr. FAULKNER moved that the President and the Secretary be the delegates to the Conference as representatives of the L.V.M.A., to see what is proposed, and then when the scheme had assumed something like a definite form, to bring it again before the Association for consideration.

Mr. W. A. TAYLOR said he would like further particulars with regard to the suggested plan. The sketch was all well and good so far as it went, but what duties did Professor Macqueen think ought to be undertaken by a so-called representative union? He confessed that it would be necessary either for Professor Macqueen to lay more particulars before the Association, or for the latter to appoint delegates to attend the Conference, with the object in view as stated by Professor Macqueen, to see what could be done and again report to the Society.

Mr. WILLIAM WOODS considered it was in too crude a state to get any definite opinions upon it.

Mr. W. A. TAYLOR seconded the proposition, which was carried unanimously.

Mr. DACRE showed specimens of disease of the Vertebræ and gave history of cases.

The PRESIDENT expressed his indebtedness to Mr. Dacre for the pathological specimens, and for the very graphic and interesting description of the cases of disease of the vertebral column.

Mr. WOLSTENHOLME also thanked the essayist for his interesting communication, and suggested that the June meeting be devoted to exhibitions of pathological specimens.

The PRESIDENT, upon Mr. Wolstenholme's suggestion that the June meeting should be devoted entirely to exhibitions of pathological specimens, proposed that the members should collect what specimens they had and bring them to that meeting.

Mr. WM. DACRE seconded the proposition, which was carried unanimously.

Mr. WOLSTENHOLME exhibited a pair of testicles from a tubercular bull which Mr. King (the Corporation veterinary surgeon), who was unable to be present, had brought to him.

Mr. LAITHWOOD then read a paper on

TUBERCULOSIS.

The subject selected is one which is now very prominent before the country and is not only an exceedingly important one to our stockowners but in relation to its transmission to the human subject, of vital interest to every individual in the country.

It appears to be the general impression that this disease in cattle is on the increase. In my experience it seems to be so, and the tuberculin test certainly reveals a most alarming condition in affected herds. And my chief aim in introducing this subject is to elucidate some method, or to discuss with you the best means by which we may lessen, if not entirely exterminate, this very great source of loss to our stockowners, and also the very considerable danger to human life.

The causes of this disease have been thought to be numerous, but I think you will all agree in this—that the one and only cause is the introduction into the system of the micro-organism, the bacillus tuberculosis.

There are undoubtedly many predisposing causes, but we may include them all in a few words, viz. : anything that has a debilitating effect or lowers the vitality in any way puts the animal in a more favourable condition for the growth of the microbe, if brought in contact with it, but all the debilitating effects cannot cause the disease if there are no tuberculous associations, I have also seen the strongest and most robust looking animals to become victims of the disease.

The bacillus appears to flourish best at a temperature between 98° and 100°F., and its growth ceases below 86°F. It may exist and retain its vitality outside the animal body but does not multiply and dies in less than six months unless kept at a favourable temperature. It is destroyed in a few hours in direct sunlight, in six days in diffused daylight in a 1-1000 solution of mercuric chloride, or a 5 per cent. solution of carbolic acid in 34 hours.

The frequency of the modes of infection I consider to be in the following order, viz. :—Inhalation, ingestion, hereditary transmission and inoculation.

In young calves and children the ingestion of milk from tuberculous udders is undoubtedly the chief source of infection.

With regard to inhalation, as we find the lungs most frequently affected, it is probable that this is the most frequent mode of infection in adult cattle.

It has been proved that the inhalation of dust made from dried tuberculous sputum will cause the disease, and I feel certain that the greatest number become tuberculous from cohabitation with affected animals and the inhalation of infected dust, and the closer they are kept without light or ventilation the more rapidly do the healthy ones become diseased.

The infective organisms are not, as is frequently supposed, transmitted in the expired air in suspension, but are contained in the bronchial mucus and expectoration projected through the mouth and nose in the act of coughing.

In its moist condition this is not dangerous to the respiratory organs, but when it becomes dry and is rubbed off from the walls or woodwork, and as dust gains entrance to healthy lungs in the inspired air, it is undoubtedly a frequent cause of the disease.

Hereditary transmission does, undoubtedly, occur ; but from the rarity with which it is found in calves (1 in 70,000), I am persuaded that in cattle, at any rate, this mode of infection has been much over-estimated Considering the rarity with which tubercular lesions are found in the fœtus or placental membranes even in cases of the most advanced generalised tuberculosis, the fœtal organism appears to be an unsuitable media for their growth, and Schmorl and Koch both assert that, unless the villi become injured by caseation or other cause, the epithelium covering the villi forms an effectual barrier to the entrance of the bacilli to the fœtal circulation.

The primary seat of the disease is in the lymphatic glands, and the bacilli appears capable of finding its way into the lymphatic system without leaving any trace of its presence at the post where it has gained admission. But after the very instructive and graphic manner in which Professor Delépine dealt with the mode of extension and progress of the disease, as well as the various animals it attacked, at a recent meeting of the Association, it is not necessary for me to go into that part of the subject.

I intend to say only a few words with regard to the dangers attending the comsumption of tuberculous milk and meat. To ascertain the infectivity of milk Professor McFadyean and Dr. Woodhead inoculated with milk from tuberculous udders with the result that over 70 per cent. gave positive results, and with milk from tuberculous cows whose udders were not affected, 16 per cent. became diseased.

They concluded that there was great necessity for thorough inspection of both dairy and meat cattle, but that there was much greater risk from the former than from the latter.

Ernst inoculated with milk from cows without udder affection, and caused the disease in 37 per cent. of cases.

There is no need for me to mention the evidence given before the Royal Commission on this disease, which you will all have read.

From these and numerous other positive proofs I could mention (which time will not permit), no doubt whatever ought to remain with regard to the dangers of tuberculous milk, and I will go further and say that not only ought we to be convinced of this danger in our own minds, but I think it is time that we expressed our opinion with a unanimous voice and acted up to our convictions.

Dr. Burdon Sanderson says there is no disease, acute or chronic, that is so destructive to human life or so productive of human suffering.

The disease contributes about 14 per cent. of deaths of all ages, but in children the greatest number of deaths from tuberculosis are returned under other titles. About 40 per cent. of deaths in young chiidren in hospitals (where alone, after a *post mortem*, a correct return can be made), are due to tuberculosis, some congenital, some from inhalation, but chiefly from tuberculous milk.

In the consumption of tuberculous meat there is much less danger owing to the rarity with which the microbe attacks the muscle, and also its probable destruction during the cooking process.

Dr. Sidney Martin asserts that infectivity corresponds with the degree of tuberculosis in the animal. He, however, in his experiments appears to have removed all fat and intermuscular tissue, which are parts more likely to contain small tubercle or tubercular lymph glands than the muscle alone.

The danger he mentions from the smearing of tubercular products with the knife in dressing the carcase, are most dangerous in those parts used for making into rolls of meat, as those are habitually made from such parts most liable to contain tuberculous serous membranes and glands, and Dr. Woodhead's experiments prove that no cooking process can be relied upon to destroy the infectivity of bacilli in any but the parts near the surface.

He concludes by condemning all animals (1) with advanced or generalised tuberculosis, (2) with tuberculosis of the thoracic organs associated with disease of the abdominal organs, (3) all animals with tuberculosis of the lumbar or popliteal glands or of the kidneys, since these lesions are signs of generalisation of the disease.

In regard to the diagnosis of the disease, this has been in the early stages beyond our skill, but, thanks to tuberculin, we are now in this connection masters of the situation.

Nocard says we have in tuberculin a *certain* means of making the diagnosis of tuberculosis. Experiments made by thousands in all countries—by Professors Bang, McFadyean, Sydin, Johne, and others—all maintain that it is a most reliable test.

Professor Bang has got statistics of over 40,000 tested, and he gives the percentage of tuberculous animals as varying from 5 to 70 per cent., the larger herds showing the greater percentage of affected animals. So far as my own small experience goes, I have found in Cheshire out of over 200 animals tested 75 per cent. reacted to tuberculin. But this must not be taken as a fair estimate, as some of the owners would have only a few of the most suspicious ones tested, others the bull only. With regard to this latter, I may say that every bull tested has been free from the disease.

The treatment of this disease has so far been considered hopeless, but I have faith that we can now detect it in its early stages, that a number may in years to come be cured, especially when we consider that it is not at all an uncommon thing to see in the slaughter-house nodules having undergone calcareous transformation in which the bacilli have from some cause died and nature has performed its own cure.

I have now a few under treatment with creosote, but it is as yet too early to speak of results. (Dose 10-25ths (1 gram. = 15½ grains) grams. in oil twice a week.) Scarpa, of Turin, has treated 150 cases with ichthyol; he records 17 cured, 82 improved, 28 no change.

The treatment of Dr. Viguarat, of Geneva, is the injection of serum from the ass. He claims to have completely cured 13 out of 25 cases treated, and with respect to the other 12 still under treatment to have a good prospect of recovery.

Nearly every drug we possess has been tried for this disease with more or less success, chiefly the latter. I have no faith whatever in any drug bringing about a cure unless in the earliest stages of the disease, for no matter what germicide is used it must reach the bacilli by the blood stream, and as the centre of the nodule (except the smallest) is cut off from the blood supply by the obliteration of the vessels surrounding it, the agent cannot gain access to the bacilli enclosed therein.

All the antiseptic can do is to kill any few bacilli that may be in the blood-stream and temporarily check their spread around the nodule.

I thoroughly agree with Dr. Squire where he says "the best means we have for destroying the tubercle bacillus exists in the action of the living cells and fluids of the body, the natural safeguards against injurious germs. If we drench the tissues with antiseptics we may diminish the vitality of the bacilli, but at the same time we impair the vitality of the phagocytic cells, and this not only at the disease centres, but throughout the body. We then interfere with the natural means of cure by weakening the vitality of the phagocytes and also of the system. I have far greater faith in plenty of fresh air and hygienic surroundings than in all the drugs of the pharmacopœia, and our chief aim should be in this direction."

Of by far the greatest importance is its prevention, and I must say that by this means I have every confidence that we shall be able to bring about its extermination in cattle.

It will, of course, require persistent efforts and considerable time. If the tuberculin test is reliable, and there is every reason to think that it is so, it is possible to separate the healthy from the diseased and keep them always apart. All calves reared from the latter should never have access to the mother, and should be fed with milk from the healthy cows, or, if from the mother, after it has been boiled. All should be tested with tuberculin once a year. Any animal that should become affected would by this means be detected and removed from the healthy ones before the disease had progressed sufficiently to become dangerous to its neighbours. With regard to the diseased animals, any showing advanced disease should be at once destroyed and compensation allowed. Any having tuberculous udders should be dried off as soon as possible and fattened. The remainder might be kept on and fattened when convenient.

All animals when slaughtered showing generalised tuberculosis should be destroyed and compensation allowed. As the destruction is for the public welfare, the public should pay for being thus protected.

If slaughter and compensation is equitable from a public point of view for pleuro-pneumonia, from which disease there is not the slightest danger to public health, surely it ought to be more so for tuberculosis, which has for its victims annually more cattle than pleuro-pneumonia had when at its highest, to say nothing of 150,000 human lives. Then also all mangers, stalls, floors, and woodwork where diseased animals have stood should be washed, scraped, and thoroughly cleansed, and afterwards washed over with a 5 per cent. sol. carbolic acid or other disinfectant. Better hygienic conditions should be enforced, as many cow houses are almost unfit for dogs.

A recognised sufficient air space ventilation, drainage, and sunlight should

be made compulsory by statute. Sunlight is the greatest and cheapest of all purifiers, and kills this bacillus and most others in a few hours, while darkness, dust, ill ventilation, and bad drainage is the nursery of all microbes.

I am in accord with Dr. Burdon Sanderson and many others in that tuberculosis should be included in those diseases under the Contagious Diseases (Animals) Act, and can join heartily with those who think that the sale of contaminated milk ought to be stopped by all possible means.

It would be advisable that veterinary surgeons should be appointed to exercise functions co-ordinate with those of the medical officer of health for each city, borough, or county, whose duty it would be to supervise the health and sanitary condition of all cattle within their jurisdiction.

In this respect Italy has, under the new Public Health Act, set a good example. We ought to have regular and thorough compulsory inspection of all dairies supplying milk for human consumption.

The advice to boil the milk and well cook the meat is good so far as it goes, but it does not remove the root of the danger. We ought not to allow our children and the weak and delicate ones of our population, with whom the greatest danger exists, to consume cow milk, plus boiled microbes, or meat with roasted bacilli, if we can prevent the possibility of either.

In this connection a very worthy and commendable example has been led in Cheshire by three dairies who, having had all their cattle tested and the affected ones removed, now advertise their milk, in cream, butter, and cheese, with a guaranteed purity and freedom from tuberculous bacilli, and I trust they will receive that support from the intelligent public that they so well merit.

I shall be glad to hear from you any suggestion that will tend to further the aim we have in view.

The PRESIDENT considered Mr. Laithwood's paper an excellent one. With regard to hereditary tendency of tuberculosis, he was under the impression that that was an exploded idea, and that there was no such thing as an hereditary tendency. He should condemn every case suffering from tuberculosis wherever the lesion was. Statistics proved that milk from tubercular animals which had healthy udders produced no ill effects.

Mr. WOLSTENHOLME, in expressing the pleasure he had experienced in listening to Mr. Laithwood's paper, said that in his opinion it formed a very practical addendum to that which had recently been given by Dr. Delépine before the Society. He had emphasised the necessity of veterinary surgeons being associated with the medical officer of health in safeguarding the health of the community. Not only was it necessary that the supply of meat be thoroughly inspected by competent men, but that some system of inspection of dairy stock, and some control over their sanitary surroundings, was absolutely needed.

In a recent paper read by Dr. Ashby before the Medical Society of Manchester, on the milk supply of large towns, the filthy surroundings of many of the animals, the absolute want of cleanliness on the part of those who milked them, the carelessness of transport together with insanitary storage and faulty distribution, were forcibly pointed out as serious causes of disease, especially among infants and invalids. The veterinary surgeon is perfectly aware and deplores these conditions and he (Mr. Wolstenholme) would argue that no one is so well fitted for the much needed inspection as a trained veterinary surgeon.

Mr. FAULKNER agreed with the previous speakers that Mr. Laithwood deserved very great credit for having put before them the subject of tuberculosis, in such a comprehensive, practical, common-sense and scientific manner, and he was entirely in accord with his remarks. So far as the proper inspection of dairy stock was concerned, this was a matter which called fo im-

mediate action, and not only the inspection of stock and byres but the whole *modus operandi* of dealing with milk. In towns, milk was sold, which were none too fit for people to live in. As to disease being scheduled and compensation allowed there were certain aspects which made it hard on some individuals and easy on others. The well-to-do could deal with it in a scientific and practical way without troubling the local authority, but with the poor farmer it was different.

Mr. DACRE said the spread of tuberculosis was caused through the gross ignorance of farmers on small farms. Respecting light and air he had seen tuberculosis occur on an estate in Cheshire which was extremely neglected where the animals were in buildings which were open to the four winds of heaven. As to the filthy condition of the milk sent into large towns, he was not surprised at this as he had seen cows milked by men fresh from loading manure on the fields.

Mr. WILLIAM WOODS thanked Mr. Laithwood for his very interesting and practical paper, which in his opinion embodied the views of all practitioners now. It would be very useful if the essayist would give the result of inoculation.

Mr. EDWARDS, of Chester, thanked Mr. Laithwood for his paper.

Mr. LAITHWOOD briefly replied. With regard to hereditary tendency referred to by the President there had undoubtedly been a few cases, but so far as he had read, there had been only five ever recorded in the human subject in which the fœtus at birth at *post mortem* had been found tubercular or with any tubercular lesions, and so far as he had read, seven was the number recorded in cattle. With regard to calves with tuberculosis when born, considering the percentage of births he thought that was almost an infinitesimal number, but as he pointed out in his paper, two authorities condemned a number of post mortems and found that if the tubercular lesions did attack the villi that there was no transmission of the bacillus into the fœtal circulation unless injury to the epithelium covering the villi. So that he thought the question of hereditary tendency of the disease was almost infinitesimal. He felt certain in his own mind that the inhalation of the infected dust and the ingestion of tubercular matter either by milk or in the food of animals were the two great sources of the disease. With regard to tuberculous udders, experiments had been carried out from milk from tubercular cows in which no udder lesions could be seen, there might have been tubercles in the udder but they were so minute that they had not been detected at the same time it might be possible that the bacilli were found in the blood circulation; they might be found in the milk production also, but he thought it would be in such a small number that it would not be considered likely to infect anything fed with it. With regard to the number of people who were affected with tuberculosis, he remembered reading an article by a Professor Coates of Glasgow, in which he asserted his firm opinion that half the population is at some period of their lives affected with tuberculosis. The number of tubercles found on *post-mortem* in the various hospitals in which this nodule had been entirely isolated as it were from any other portion of the lung proved that in a great number of cases a cure had been effected by natural means and he was much astonished to read his opinion that so many as half of the human population were sometime during their lives affected with this disease, but as Professor Coates had it, the majority of them recovered. Some years ago he was under the impression that no case of tuberculosis ever did recover but he was now of a different frame of mind with regard to that question.

Replying to Mr. Munro and Mr. Wood's enquiry with regard to inoculation as to the danger, if any, from the injection of tuberculin, so far as his experience went he had never seen the slightest injury to result, and he felt

certain, and it was the opinion of Bang and Nocard, that it did not affect the animal, nor did it alter the condition of the milk in any degree whatever. With regard to the cleansing of byres, it was, in his opinion, very important that, after the removal of a tuberculous animal, that stall should be thoroughly cleansed, washed and disinfected, and also that it should be done in a moist state.

Mr. J. B. WOLSTENHOLME related a case of Scirrhus Cord Botrionycosis (Bollinger). The communication was accompanied by exhibition of the tumour (3 lbs. 13 ozs.), together with a number of microscopic sections, and a large sketch of the minute structure to scale.

Mr. FAULKNER thanked Mr. Wolstenholme for his very interesting communication respecting Scirrhus Cord. He had not seen so many cases of Scirrhus Cord as he used to.

Mr. FAULKNER proposed that a vote of thanks of the members of the association be given to Messrs. Dacre, Laithwood, and Wolstenholme, for having so kindly provided the food for the evening's discussion.

Mr. LAWSON seconded, and the vote was carried unanimously.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

AN ordinary general meeting was held on Thursday night, the 7th ult., at the Royal College of Veterinary Surgeons, 10, Red Lion Square, Bloomsbury, Professor J. Penberthy presiding. There were present thirty-six members of the Society and six visitors.

After the transaction of business connected with the Society, the following important subject engaged the attention of the meeting :—

The Standard of the Preliminary Examination :—"Divided" Certificates.

Mr. J. A. W. DOLLAR: Mr. President and gentlemen, in rising to speak to the motion standing in my name, I cannot help referring to the gravity of the situation with which the veterinary profession now finds itself face to face.

Mr. HUNTING: May I ask what the motion standing in his name is? I don't see it.

The CHAIRMAN: I take it that the motion is as it appears on the agenda paper: "*re* R.C.V.S. and General Education."

Mr. HUNTING: Really, there is no motion, only a "notice of motion."

The CHAIRMAN: There is a notice of motion—a basis to move on, I suppose.

Mr. DOLLAR (continuing): You may remember that when I had the honour and privilege of addressing you in 1892, in support of Veterinary-Captain Raymond's motion placing our matriculation examination on the same basis as that of the medical profession, I dwelt on the unfortunate pressure which we all felt, on the difficulty which each member of the veterinary profession experienced in maintaining himself in the position in which he found himself, and on the urgent necessity for discovering fresh fields of occupation for our younger members. I suggested as possible outlets meat inspeetion, the office of a sanitary inspector, the offices connected with the combating and suppression of infectious diseases communicable from animals to men; and I ventured to prophesy that at no distant date the veterinary profession would be called upon to take a very prominent position in connection with these questions, and that, with the position which our matriculation examination would assure to us, we should have an equal status and an equal share of these responsibilities with the medical profession itself. The debate was very long and exceedingly interesting. It was adjourned on two or three occasions, and I believe almost every member of the Society took part in it, amongst others, my friend, Mr. Hunting (whom I am pleased to see here to-night), speaking

in very warm terms, and declaring that, in his opinion, we could not do better than accept the standard set by the General Medical Council. I need not trouble you, gentlemen, by referring at any length to the terms of Veterinary-Captain Raymond's proposals, which were accepted by this Society, but to one point, and to one point especially, I think I ought to refer. That is the express statement of Veterinary-Captain Raymond, when introducing his scheme, that the matriculation examination there mentioned was identical with the medical, and that it could not be passed in fragments, but must be passed at one and the same time. The importance of this declaration can scarcely be over-estimated, because at one bound it placed us on a level with the medical profession, it ensured to us an equal claim with them to any offices of the kind to which I have referred which might become vacant, and was the first and most important step towards the realisation of that high and important status which the veterinary profession has always set before it. A few weeks after the scheme was submitted to and accepted by this Society, it was brought before the Council of the Royal College of Veterinary Surgeons and, after much debate, it was there passed. It may, perhaps, be worth while if I read the words used on that occasion :—"That on and after the 7th September, 1893, students who enter the veterinary class are, prior to the first professional examination by the Royal College of Veterinary Surgeons, required to produce to the Secretary of the Royal College of Veterinary Surgeons a certificate that they have passed the preliminary general educational examination in force after the 1st of January, 1892, of the General Medical Council, or to produce an educational certificate recognised by that body." The Council adopted this resolution, and I believe that for a year no question was raised. The first difficulty which arose was produced by a letter from one of the Scotch schools in October, 1894, asking whether the Council of the Royal College of Veterinary Surgeons should recognise divided or partial certificates. The Council deliberated on the point and unanimously resolved that it would not accept such certificates, and my friend, Mr. Hunting, who was then president, endorsed on the back of the letter a reply in these words: "We require certain certificates (see the enclosed); each certificate must be granted by the educational body specified, and we cannot accept any partial or divided certificate." Now, gentlemen, that might have been thought sufficient, but with a curious persistency the Scotch school once more brought the question to the front within the course of a week or two; and on October 18th, 1894, it became necessary to write a second reply. A letter had been addressed to Mr. Hill, secretary of the Royal College of Veterinary Surgeons, putting forward this much-debated question once more. Mr. Hill consulted the solicitor of the College. Mr. Thatcher confirmed the opinion that divided certificates could not be accepted, and Mr. Hill wrote to Mr. Hunting, informing him of the fact, and asking his instructions as to the reply he should send to Professor Mettam, who was the person writing. On the 3rd the Council had decided against the divided certificate, and Mr. Hunting had written that the Council could not accept any partial or divided certificate. On the 18th of October Mr. Hunting wrote to Mr. Hill: "I am very busy to-night and have to go to Bletchley in the morning. *Re* Mettam. The Council decided to accept the certificates mentioned in our list. If the educational bodies give these certificates it does not matter to us how they are obtained. I know no published rule of ours which says they must be passed *en bloc*." Perhaps Mr. Hunting will explain how he came to say on the 3rd of October, 1894, that the Council could accept no divided or partial certificate, and how on October 18th he came to declare that he knew of no rule of the Council requiring the examination to which these certificates relate to be passed all at once. It is probably an oversight on Mr. Hunting's part. (Mr. Hunting: "No, it is not!) I am very far from

saying this to cause Mr. Hunting annoyance, but I think, considering how exceedingly important the second letter of Mr. Hunting's has become, I should in justice afford him an opportunity of giving that explanation which he has more than once said he is desirous of making. In my humble opinion, this was the first and greatest blow that the matriculation had ever received, and since that time a long and protracted struggle has been going on between two sections of the Council of the Royal College of Veterinary Surgeons, one of which is in favour of divided and, as I claim, debased certificates; the other, of undivided and legal certificates. Those who advocate debased certificates have made a large number of suggestions for acceptance, and they really are a little comical. At first we were told that men entering the veterinary profession were of a too low intellectual standard to render it possible for them to pass this examination. Then we were told that men of higher education would make poor practitioners. Next some ingenious person suggested that the income to be derived would never be worth the initial expense. We dispute all this. Another gentleman, a little more ingenious than the previous ones, who is, I am sorry to say, a Scotchman—Mr. Fraser—advanced the novel theory that a man who went up for examination three or four or ten times was as good a man as a man who passed all at once. Well, gentlemen, all this was easily refuted. The most dangerous opponents we have had to meet were those men who endeavoured to raise prejudice and who said that in adopting the list of the General Medical Council we were humbling ourselves and tying ourselves to their chariot wheels. I do not think myself that this will affect you. In fact, I think I should be justified in describing these arguments as the desperate resorts of those who were bereft of straightforward reasons, and I have no hesitation in describing them as so many red herrings drawn across the path to divert you from the true issue, and that they are expedients unworthy altogether of honourable argument, and insulting to you and the profession at large as men of common sense. Finally, we have those persons who think they can stifle discussion by ridicule and by minimising the issue. It is idle, I think, to attempt to minimise the issue. As a matter of fact—whatever may be said by the opposite side—no more important issue has been brought before this profession for the last twenty years; and I, for my part, have no hesitation in placing it even before the last Charter in importance, for while we cannot all be members of the Council and practitioners, every man here and in this profession will suffer if the matriculation is degraded, while very many will gain if it is upheld as originally passed and accepted by this Society, by the Council of the College, and by the profession at large. We must bear in mind, not the trivialities which have been advanced from time to time, but the great and main issue of whether we will have an education similar to that of the medical profession, or whether we will have one which gives us no position whatever in the eyes of the public. I do most earnestly hope that you will place that issue before you, and will give your decision this evening upon it. If you decide to uphold the medical standard, we shall continue our strnggle with the medical profession evenhanded, we shall enlarge our sphere of action, and we shall find outlets for our younger men; but if you refuse to accept that standard, we shall find ourselves once more in a far worse position than we were in twenty years ago, while with a lower standard and less claim on the public we shall, at the same time, be suffering all the evils that result from the enormously increased number of men we find in our ranks. In conclusion, I would enlist your sympathies on behalf of the defenders of the matriculation. We have had much opposition to meet, official opposition, ridicule, and the powers of the Press. But that is not the worst. The greatest and most serious enemies we have had to encounter have been those persons who have concealed their opinions until they could discover which way the cat was

going to jump, and it is to those persons we have to ascribe the refusal to adopt Professor Edgar's motion, placing our examination on the same basis as the medical. That motion was brought forward at the last meeting of the Council with the idea of determining the question before the election and allowing the profession to state its mind. Unfortunately, those gentlemen who dabble in what I may call tactics as opposed to principles, seem to have carefully thought the question out, and to have decided the exact lines on which the whole question was to be settled. Accordingly, they have refused to declare their own intentions. They have shelved the question, they have deferred it until after the election. They have afforded us no opportunity of putting the question to the profession at large, so that the profession may arrive at a decision on the point; and, at the same time, they have cut from under our feet the strongest and best argument with which we could have appealed to the profession. Gentlemen, I hope you will not support those members of the Council who have taken such action, but will, as I have already urged you, contest this question on the broad and liberal grounds of whether we shall occupy the same position as the medical profession, whether we shall enter level handed into the strife with them, and whether we shall assume a social position equal to theirs. The question has, I think, come up at the meetings of other veterinary societies. The Midland Counties Society has debated it most carefully, and has arrived at a certain decision. The North of England Society has also considered this matter, and they have united in adopting a certain resolution which it is now my privilege to place before you. I move: "That, in the opinion of the Central Veterinary Medical Society, the higher standard of preliminary examination should be maintained, and that all the subjects should be passed at one sitting, as in the medical profession, and we pledge ourselves to support only those candidates who are prepared to act in accordance with this view." That, gentlemen, is my motion, and I submit it to you, and I hope your judgment will be determined not by small and narrow views, and not by the tactical points which will doubtless be advanced. I hope you will not allow yourselves to be led away from the great broad issue by ridicule, but that you will consder well that you hold in your hands at present the determination of the fate of this profession for at least another decade. I hope you will continue the action which was initiated so auspiciously in 1892 by the adoption of Veterinary-Captain Raymond's scheme.

Mr. HUNTING: I rise to second Mr. Dollar's motion, and with very much pleasure. No doubt Mr. Dollar is astonished at my doing so, because my friend has somehow or other managed to deceive himself into believing that I was opposed to keeping up the standard of education. Why in the world he should have got this notion into his head I don't know. The only references he made to me were two quotations which he thinks are horribly inconsistent, but which I do not. First of all he said that I wrote to the Secretary here, saying, in October, 1894, that "we cannot accept any partial or divided certificates." Quite so, and I have always been of that belief. Then, so far we are agreed. Now, where does the difference come in? I next wrote to Mr. Hill that I knew of no published rule that the subjects of the examination shall be passed all at once. There is nothing inconsistent in that—(Mr. DOLLAR: Oh, no, nothing)—for the simple reason that we have no rule which says they shall, and we trust to the educational body who gives the certificate. (Professor MCFADYEAN: Oh! oh!) Your turn will come, Professor. There is not a rule in our book which says that all these subjects shall be passed at one time. In the 1894 Register you will find the bye-laws laid out in a section. In that section I defy anyone to point out a rule, or a word of a rule, which says or implies that all the subjects must be passed at one sitting.

Professor MCFADYEAN: Refer to page 81.

Mr. HUNTING: Page 81 and the next four or five pages have nothing whatever to do with the bye-laws. and their contents are not included in the bye-laws. These pages comprise a dozen obsolete rules which were published for the edification of the Council. It was on my proposition that these obsolete bye-laws and things were inserted, so that we might know where we were, and be enabled to prepare the new bye-laws. These obsolete rules are not among the new bye-laws, and if you examine the 1894 Register from the first bye-law to the last, you will not find one rule or word which says anything about the examinations being passed either at one or twenty times. Well, Mr. Dollar proceeded to argue in favour of the acceptance of the standard of the General Medical Council. With the exception of two men on the College Council, so far as I know, all are agreed that we should maintain this standard. The only thing asked by members of the Council is that the bye-laws should be rendered clear and intelligible, so that anyone looking over them may be able to see at once what examinations have to be passed. Mr. Dollar talks of his "principles" and my "tactics." I return the compliment, and say, "your tactics and my principles." (Mr. Dollar: I mentioned no one's name in that connection.) Then Mr. Dollar poses as the defender of the matriculation. No one has ever sought to injure the matriculation—no one wants to interfere with matriculation. Who are the defenders of matriculation? Are they the noble five who resigned their seats at the Council the other day? They appear on the minutes as martyrs to this question of examination. You will remember an ancient prophet who thought he was the only righteous man left in Israel. He was corrected and told that there were still 7,000 men who had not yet bowed the knee to Baal. There are hundreds of men in this profession quite as keenly alive to the importance of maintaining the educational standard in our examinations as the five gentlemen who resigned. There are many questions connected with the coming election of members of the Council which have quite as much bearing on the position of veterinary surgeons as the education question. As to Professor Edgar's motion, which has been referred to, it was a weak-kneed, back-boneless, lazy motion. It seemed to say, "we will get out of this bother easily. All we need do is to say we will follow the medical profession; we will pass a resolution that all our certificates shall be such as are acceptable to the medical profession." Now the objection to that is that we don't want to follow the medical profession. The objection to that is that, instead of making our own rules, instead of taking the trouble to make our own bye-laws intelligible, we are asked to insert a clause somewhere referring people to somebody else's rules. I object to that. If we are to have bye-laws, let us set about framing them in a regular and independent way, which will not prevent us placing ourselves on a level with the medical profession. One or two rules are all that are required. Let one of the rules say that such and such subjects (specifying them) are compulsory, and another state that the student shall pass in all the subjects at the same time. I voted for the adjournment in order that time might be given for this to be done. I have given notice of a motion to alter the bye-laws in that manner. Now, gentlemen, it is a frivolous thing flogging a dead horse. If we are all agreed, what is the use of arguing except to get back on the Council again? (Professor McFadyean: Or to keep some off.) I can quite understand that four or five gentlemen who resigned and want to return to the Council at the head of the poll should wish to pose as saviours of the profession and as the sole believers in decent education. But there are not alone five righteous men in the veterinary profession. I need hardly waste your time in defending what I wrote in 1894. This is 1896. Certainly this question of education is now governed by the existing rules. As far back as June, 1895, the Council passed the present bye-laws. In December last the Council on those bye-

laws told the secretaries exactly what I told them before: that our bye-laws did not provide for going behind the certificates at all, and if a certificate named in our schedule—one certificate mind, not a divided one—was duly forthcoming, we must accept it. That was in December last. Will you believe it that Professor McFadyean proposed to the Council to acknowledge that that instruction was a violation of the bye-laws?

Professor McFADYEAN: I never said anything of the kind. I ask you to read the resolution I proposed.

Mr. HUNTING: All right.

Professor McFADYEAN: Mr. Hunting may search the minutes to the crack of doom and he will not find that I proposed any such resolution. I moved that the instructions issued to the Secretary of the Examining Board in Scotland were illegal, were contrary to the bye-laws. Now Mr. Hunting has to find what those instructions were.

Mr. HUNTING: The resolution was that we should telegraph to the Secretary telling him to do as he had done.

Professor McFADYEAN: Now you are right.

Mr. HUNTING: We are agreed upon one thing; that a telegram was to be sent to Mr. Rutherford telling him to do what he had done. What he had done was what I had instructed. The Council approved of my letters to which Mr. Dollar objects. The Council approved of them so far as they were an interpretation of what we thought the bye-laws meant, and what we still think the bye-laws mean. In addition to that telegram to be sent to Mr. Rutherford there was a distinct resolution passed by the Council at the same meeting. Mr. Rutherford was telegraphed to do as he had done.

Professor McFADYEAN: That is to accept certificates as before.

Mr. HUNTING: And that was in accordance with the instruction of my letter in October, 1894. (Professor McFADYEAN: No.) Very well. The Council carried that as their opinion and the next thing was that Professor McFadyean moved that the "directions recently given to the Secretary of the Examining Board in Scotland regarding the acceptance of educational certificates were in violation of the bye-laws."

Professor McFADYEAN: Yes.

The CHAIRMAN (interposing): I think the business of the meeting will be promoted if this conversational method is dispensed with as far as possible.

Mr. HUNTING: Well, here are the words Professor McFadyean just denied.—"In violation of the bye-laws." From then until now this party of five has not quite known which way to go. They objected to this violation of the bye-laws at one meeting, and at the following meeting when the Council marked its sense of abstract resolutions, accusing them of violating the bye-laws, by expunging this particular motion from the minutes, then their resignations occurred. It is simply flogging a dead horse. No one objects to the higher examination at all, but the five gentlemen who resigned want it arranged in their own way and they have not got it. What I wanted to find was this (reading from report of the Council's meeting held on the 4th December last.) "Mr. Barrett's amendment was then put and carried, eleven voting for and six against." What was Mr. Barrett's amendment?—"That in the opinion of this meeting the certificates comprised in the first schedule of bye-law 52 be accepted as a sufficient educational test irrespective of the mode in which such certificates are obtained." That was the deliberate interpretation of the bye-laws by the Council.

Mr. BARRETT: I rise with some reluctance to address you on this matter. I hoped that Professor McFadyean would speak first, but with his usual tact he has preferred to wait awhile in order to discover what I have to say. I think it is a very desirable thing that Mr. Dollar has brought this subject before you to-night, because although the subject is not of that magnitude which he

attempted to attach to it, it is of some importance that you should ascertain what your true position with regard to this education question is. There is some pleasure in attendiug this meeting to-night because the speeches have been temperate and entirely destitute of personalities, and that is what we have not experienced at recent Council meetings. I thank Mr. Dollar for having stated his case in such a fair and equitable manner. With regard to these examinations you have been told that the question was one of such awful magnitude that four or five gentlemen failing to get their own way felt it to be their duty to resign their seats on the Council of the Royal College. I assure you that not a member of the Council, except those gentlemen, feels that this is so great a question. There is not a member of the Council who does not feel that bye-law 52 should be adhered to not only in the interests of ihe profession but of the students as well. These five gentlemen have not resigned. Two of them have sent in letters of resignation—(Professor McFadyean and Mr. Mulvey). Professor McFadyean is quite safe with regard to his seat on the Council. He will assuredly be re-elected. I am sure we should all be sorry to see him absent from the Council. Mr. Mulvey is another, is very assiduous and will, in all probability, be re-elected. But the curious thing is that the other three gentlemen have not ventured to resign. I suppose they will do so after this meeting if the decision of the meeting is favourable to their views. With regard to the instructions given to the Scotch Secretary, I agree with Mr. Hunting. A certain interpretation was put upon bye-law 52 and certain instructions were given to Mr. Hill, the Secretary of the Royal College of Veterinary Surgeons, who telegraphed them to Mr. Rutherford. The telegram was to this effect: "That the certificates should be accepted as before." It really meant that the divided certificates should be accepted inasmuch as those had been received. Now I come to a more important matter, and I assert emphatically that that was the correct interpretation of bye-law 52 and no other sense can be attached to it. If you desire that the subjects be passed *en bloc* then you must alter your bye-law and prepare the students for the change you wish to bring about. You have been told by Mr. Dollar that a red herring is to be drawn across your path, that we do not desire education, that a divided certificate is a debased certificate and so on. I dispute it. Each member of the Council is desirous that you and the profession generally should have an opportunity of discussing this question fully, and they would be very pleased to take their advice provided it was a clear expression of the voice of the profession. Another important matter is as to whether the medical examination should be accepted, whether we should follow the General Medical Council. I agree with Mr. Hunting that we should not. I say we are quite qualified, have brain power enough to devise our own scheme and why we should blindly follow the Medical Council I am at a loss to understand. In my opinion the examination of the General Medical Council is not a perfect examination. The Council require that certain subjects in preliminary examination shall be passed at one time, but I want to instance the hardships which might result if this rule were in force in regard to us. The other day when I was speaking to Professor Williams he instanced the case of a man who was present in an examination room amongst eight others and who obtained the highest number of marks of any student in the room. He was, however, rejected hecause he failed in his mathematics. What I say is this: a man may pass a good examination, he may pass a better examination than that required by the General Medical Council, and yet be excluded from entering as a veterinary student into your school. I will take the case of a man, of a student, who does not expect to beeome a veterinary surgeon but who may be educated for general or commercial purposes. Say he has passed the College of Preceptors, passing in French and German instead of Latin. You insist by the Medical Council's

examination upon Latin being one of your languages, and so, if you follow that, such a man would not only have to be examined in Latin but in all the subjects in which he had already satisfactorily passed. I think you thus place a task upon the student which is unnecessary. We are constantly being told by Mr. Dollar and others that these divided certificates are necessarily debased certificates. I do not think so myself. I think it just possible that a man may pass a better examination and be excluded from our schools than a man who has merely passed in the specific subjects required by the General Medical Council.

Mr. DOLLAR: If I am not interrupting, may I ask how many times you would allow a student to go up for matriculation—ten times, or how many?

Mr. BARRETT: I think that is purely a matter of detail. I am not here to answer the questions of Mr. Dollar. As a member of the Council of the College and of this Society, I say most emphatically that I am not in favour of lowering the standard. But constantly varying your bye-laws is placing students in a most unsatisfactory position. They do not know what they may be called upon to pass six months hence. This altering of bye-laws is unfair, and, in the present state of things, unwise. I would urge that at the present time there should be a period of rest from change. The profession as a whole is tired of this ever-recurring educational question. It regards the existing educational standards as sufficient. It desires a year or two to elapse before the educational question is re-opened, if it is to be re-opened. When it is to be re-opened I should vote for a more stringent examination, so far am I from desiring to lower the educational standard. At the same time, I think it would be a misfortune to disturb existing regulations. If they are to be disturbed the students should have adequate notice. There is another thing which must have some bearing on this question, and that is the financial condition of the Royal College of Veterinary Surgeons. I may be told that we have nothing to do with finance, that the question has nothing to do with finance, and that it does not matter if the College lost £150 last year, and may lose £450 in the current year. I submit, however, that this is a very important matter to us. The financial condition of the College is causing very great anxiety to the Council, and it will cause still more anxiety if you insist upon ever varying the regulations. Mr. Dollar has, with his usual eloquence, told you that he and his friends have been misrepresented, that the press has been against them, and that the enemy has resorted to tactics not quite honourable. When I tell you that discussion was almost entirely on their side, and that the other side had hardly a word to say, owing to the approach of dinner-hour, and because of a desire to get away, I think Mr. Dollar's remarks were hardly justified. Professor Edgar's motion has not been voted upon. I, for one, shall vote against it. I think it most inopportune and dangerous. If you wish your examinations to be different, alter your bye-laws. As to any resolutions which may have been passed at the instance of Captain Raymond, or anybody else, that does not affect the point. We are bound by bye-law 52, and by the conditions of that bye-law, and to receive certificates even though the subjects may not have been passed *en bloc*. In my opinion that is sufficient, and I ask you to pause and think seriously before you make an alteration which would cause great inconvenience to the students, probably serious loss to the profession, and might not add to the dignity of the veterinary profession.

Professor ALMOND: For the information of members not acquainted with the bye-law, perhaps it would be well if the Secretary read the bye-law.

The SECRETARY (reading the bye-law): "Students who enter the veterinary

schools shall, prior to the first professional examination, produce to the Secretary of the College one of the certificates specified in the first schedule hereunto annexed."

Mr. BARRETT: The bye-law says nothing as to the mode in which those certificates shall be obtained.

Professor MCFADYEAN: You declare yourself willing to accept divided certificates. What is the meaning of a divided certificate?

Mr. HUNTING: No one has yet seen two certificates presented.

Professor ALMOND: Could a document be described as a certificate if it consisted of two parts? It seems to me that a certificate refers to one examination. If it consists of two parts, it appears to me, it would have to be described differently.

Mr. WALPOLE asked if he were to understand that an examining body had ever issued a final certificate embodying perhaps one subject only, but that before-hand they had given perhaps ten other certificates containing subjects required by the Royal College of Veterinary Surgeons.

Mr. BARRETT; I believe a student could have a certificate for each subject of his examination.

Professor MCFADYEAN: I ask you (Mr. Barrett) to name the examining body mentioned in our list that will grant a single certificate relating to ten subjects, that were not passed all at once. Name the body. You must be able to do that, or you would not have spoken so cofidently.

Mr. WALPOLE: Mr. Barrett said that certificates had been received by Mr. Rutherford, the Scotch Secretary, in "that form." I want to know in what form they have been received.

Mr. BARRETT: I have not seen the certificates.

Mr. WALPOLE: But that was the assertion you made.

Mr. BARRETT: I merely said that Mr. Rutherford had been receiving partial certificates, and I gave what information he conveyed to our Secretary, Mr. Hill. Undoubtedly partial certificates have been accepted, otherwise Professor McFadyean would have no cause of complaint if those certificates had not been received.

Mr. DOLLAR: I don't agree with that at all, Sir.

Mr. EDGAR: I have very much pleasure in supporting Mr. Dollor's proposition. It seems to me, notwithstanding Mr. Barrett's assertion, that this is an important subject. It is an important subject from the very fact that Mr. Barrett says why not hold to the present educational standard. I must really ask what is the present educational standard? It appears to me that the Council of the Royal College are not agreed upon that. It seems to me that there is really no standard, and an effort is now being made to get a proper basis, and surely that is of importance. I think the remarks Mr. Barrett made about the certificates are rather unjust to the Scotch Secretary, inasmuch as he says he (Mr. Rutherford) has received divided certificates, while he (Mr. Barrett) can adduce no facts about the case. He says he has never seen one of the certificates which have been received, and so does not know of their nature. So far as I understand this question, it was decided by the legal adviser to the Council on October 4th, 1894, that a divided certificate could not be received, that the subjects under examination must be passed all at one time. I believe that was the opinion of the solicitor.

Mr. DOLLAR: That is so, and the solicitor's opinion has been supported by counsel's opinion.

Mr. HUNTING: I beg to state that is not the case.

Mr. DOLLAR: It is the case.

Mr. HUNTING: I beg your pardon. We will turn up the counsel's report. He (the counsel) really says we must alter our bye-law.

Mr. EDGAR (continuing): It seems a serious matter that, after the solicitor

has decided that divided certificates cannot be received, for the Council to pass a resolution declaring that such certificates can be received. It is placing the College in a very unfortunate position. Either we want a new legal adviser or the counsel cannot know what they are doing. I must say I was very sorry indeed to read about the resignation of those gentlemen who brought the subject forward. My idea was that they were on the right path, and that they should have stuck to the Council, and fought the matter out. I think, for many reasons, it is unfortunate that they sent in their resignation. I do not agree with accepting the rule of the General Medical Council. We ought ourselves to have a definite code of subjects which must be passed by the students, and I think Mr. Hunting's suggested two new rules would be the very thing needed. On the other hand, I think it is necessary to ascertain beyond dispute the position in which the Council stand; whether they are right or their legal adviser. With respect to Mr. Barrett's remarks as to the financial condition of the Royal College, I must say the Council are not required to make that institution a financial success. Their function is the examination of students who come forward with a view to their admission to the veterinary profession. If the income of the College does not reach a certain point they will not be able to give sums away—that is all.

Mr. UPTON expressed his fear lest by their high and mighty educational standards they should deprive poor men, capable of making good veterinary surgeons, and who would do credit to the profession, of the opportunity of joining their ranks. He had no fear for the social status of the veterinary surgeon in comparison with that of the medical practitioner. His conviction was that the former would always be able to hold his own in this respect. A man's status depended very much upon his own individual conduct.

(*To be continued.*)

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE spring quarterly meeting of this Society was held at the Queen's Hotel, Leeds, on April 24th, the president, Mr. J. Clarkson, Garforth, in the chair. The following members were present: Messrs. Frank Somers, Leeds (hon. sec.); S. Wharam, Leeds; J. Cooke, Scarboro'; F. W. Clough, Morley; E. H. Pratt, Northallerton; M. Robinson, Barnsley; A. W. Mason, Leeds; J. Atcherley, Harrogate; J. W. Lazenby, Boston Spa; J. E. Scriven, Tadcaster (hon. treas.); A. W. Briggs, Halifax; Frank Scott, Knaresboro'; J. Carter, Bradford; Sam Chambers, Kirkheaton; H. Snarry, York, and Principal Williams, Edinburgh. The visitors were: Messrs. H. Dyson, Kirkheaton (vet. student); Mr. Child, Leeds (vet. student): Mr. Newsome, M.R.C.V.S., Thornbury, Bradford; and R. W. Raymond, A.V.D., Leeds.

Apolcgies were received from Professor C. Steel, Dublin; Professor Penberthy, London; and Mr. G. E. Bowman, Leeds.

Nomination and Election of Members.

On the motion of Mr. FRANK SOMERS, Mr. H. Newsome, of Thornbury, near Bradford, was nominated for membership.

Mr. J. Abson, of Sheffield, was elected a member, the resolution being proposed by Mr. J. E. SCRIVEN, seconded by Mr. MASON, and supported by Mr. F. SOMERS.

Election of Council.

The SECRETARY read letters from the Royal Counties, South Durham and Yorkshire, the North of England, and the Lancashire Associations with respect to the pending election of the Council of the Royal College of Veterinary

Surgeons. Yorkshire were again invited to amalgamate with Midland and Lancashire in the support of candidates and to share the expense of issuing a circular in support of the gentlemen whom it would be decided to nominate.

Principal WILLIAMS pointed out that, so far, there were comparatively few nominations, although there would be a somewhat large election by reason of the resignation of four or five members of the Council whose term of office did not expire this year.

The PRESIDENT said that if anyone desire to nominate a gentleman from Yorkshire they would be very likely to secure his election, having regard to the number of members required this year. The period for which Mr. Mason, their present representative, was elected did not expire this year, and that gentleman was not retiring.

Mr. MASON thought that some gentleman from their Association should be nominated. He was certain that if they ran a candidate they would carry him, in which case they would have someone to represent them next year if he then failed to stand or was not elected. The subjects which came before the meetings of the Council, and particularly just now, were extremely interesting to them as a profession. He favoured the combination which had existed in previous years.

The PRESIDENT said it was very desirable that they should have adequate representation on the Council.

Mr. FRANK SOMERS agreed with the views of Mr. Mason, and added that if they were to have another representative on the Council they could not have a better man than their President. He suggested that Mr. Clarkson should allow himself to be nominated.

Mr. MASON observed that he did not know any man who would receive greater support than Mr. Clarkson if he would consent to stand.

Mr. F. SOMERS embodied his suggestion into a resolution, and it was then seconded by Mr. MASON and cordially supported by Mr. BRIGGS, Halifax.

The PRESIDENT thanked them for the compliment which they desired to pay him, but said that he could not accept it, as he really could not afford to give the time necessary to the proper discharge of the duties of the office.

Principal WILLIAMS said he hoped they would, as far as possible, support the candidates for the Border Counties and Scotland. He should do his best to get support for Mr. Clarkson.

The PRESIDENT observed that it was of the greatest importance that the North of England and Scotland should be well represented. At the present time they were inadequately represented as compared with the South of England. As to his own nomination, he asked them once more to propose someone else.

Mr. COOKE (Scarboro'), as vice-president of the Association, then submitted the resolution in favour of Mr. Clarkson's candidature, and it was carried unanimously.

The PRESIDENT returned thanks for the unanimous vote, but intimated that he could not give a definite answer to the invitation on that occasion. He must take time to consider the matter.

Mr. MASON hoped that consideration would enable Mr. Clarkson to accept the invitation, and that the election would result in him having a Yorkshire colleague on the Council. As they would not again meet as an Association before the election, he thought it would be desirable that they should have a second shot in their barrel, in the event of Mr. Clarkson declining to stand, and therefore he proposed the name of Mr. Cooke provisionally. As far as possible, they in the North should be as well represented as the South of England.

The PRESIDENT said that if Mr. Cooke would only promise to stand he would at once withdraw in his favour.

Mr. COOKE replied that at present he could not see his way to stand; at some other time he might. He thanked them for the compliment paid him.

The PRESIDENT then promised to communicate his answer to the Secretary in a week or so, and Mr. BRIGGS said that if Mr. Clarkson's reply was unfavourable, it would be an easy matter to call a special meeting of the Association.

Mr. MASON proposed that as an Association they should amalgamate with the Midland and Lancashire Counties as heretofore, and this having been seconded, was adopted *nem. con.*

Professor Macqueen's Scheme.

Mr. F. SOMERS explained that to formulate resolutions on the subjects raised by Professor Macqueen would require long and careful consideration. There were two courses open to them—either to allow the letter to lie on the table for the present, as other societies had done, or to form a committee to consider the communication, which no doubt contained many sensible things.

Mr. SNARRY proposed that the letter should be allowed to lie on the table for the present.

Mr. BRIGGS seconded, observing that he was no trades unionist, and he hoped he never should be.

The PRESIDENT dared say there was a great deal in Professor Macqueen's scheme if only properly examined. It required a great deal of consideration, and they might perhaps do good to the profession if they were better combined than at present.

A Criticism of the Profession.

Mr. BRIGGS desired to draw attention to a criticism of the profession on the occasion of the recent deputation from the National Federation of Meat Trades to the President of the Local Government Board (Mr. Chaplin) on the subject of tuberculosis. He pointed out that one of the speakers, Mr. T. Myers, butcher, of Leeds, was reported in *The Yorkshire Post* that "he had heard that veterinary surgeons told cowkeepers when their beasts were attacked with tuberculosis, to fatten them up and send them to the market, and the butchers who bought them had to bear the loss." He (Mr. Briggs) regretted that a statement of the kind in question should have been made, especially at the present time when the veterinary profession was being favourably criticised in the press with regard to occupying the positions of inspectors of meat. A more ambiguous and reckless statement than that of Mr. Myers was never made. It was made on a most important occasion, and was calculated to do the profession a great deal of harm. He thought that some strong resolution ought to go from that Association, and that Mr. Myers should be further asked either to withdraw or substantiate the statement. He noticed that Mr. Myers said he had heard such a thing, but they ought to have something more definite than that. He did not know of any veterinary surgeon who would recommend any man to fatten an animal when he knew it was suffering from tuberculosis. He always understood that tuberculosis was a wasting disease; and, in fact, in his district they called animals affected with the disease "wasters." He thought it would be impossible for Mr. Myers to supply data substantiating the statement made.

Mr. FRANK SOMERS explained that the moment he saw the report complained of, he went and saw the Secretary of the Leeds Butchers' Association, and challenged him that Mr. Myers could not mention a respectable veterinary surgeon who had advised the fattening of cattle suffering from tuberculosis. He was then shown a report in a trade journal of the deputation to the President of the Local Government Board, but it did not contain the passage in Mr. Myer's speech to which exception was now made. The Secretary of

the Butchers' Association doubted whether Mr. Myers had been correctly reported in the Leeds paper, and further expressed the opinion that Mr. Myers had not given utterance to the statement complained of. If Mr. Myers had said what was attributed to him, something certainly ought to be done in the matter.

Mr. MASON agreed that some notice should be taken of the speech.

Principal WILLIAMS explained that there was a bill before Parliament which provided that veterinary surgeons should be consulted by the medical officers of health of a place as to whether the cattle were diseased or not. The Glasgow Corporation, in their wisdom, had petitioned against that clause upon the ground that it would be impossible to obtain the assistance of a veterinary surgeon in various parts of Scotland, and had suggested that the matter should be left entirely in the hands of the sanitary inspector and the medical officer of health. The petitioners wished to put on one side altogether the provisions made in the Bill for throwing upon the veterinary surgeons consulted the responsibility of a correct diagnosis of the disease. The Council of the Royal College were going to move against the action of the Glasgow Corporation, and he was going to ask the Highland Society to do the same. He trusted that with the assistance of those bodies the clause would be allowed to remain in the Bill as at present. It was a piece of gross impertinence on the part of any medical officer of health to instigate any council or body to debar veterinary medical surgeons from occupying their proper position.

Mr. BRIGGS said the alleged assertion of Mr. Myers affected them locally as a profession, and he had already been twitted about it in the town where he lived. He moved a resolution denying the correctness of Mr. Myer's statement, and calling upon that gentleman either to substantiate or withdraw it.

Mr. MASON seconded, thinking that action should be taken at once with respect to the matter.

The resolution was unanimously agreed to, and to give effect to it a further motion was adopted, on the proposition of Mr. CLOUGH, and seconded by Mr. LAZENBY, directing the Secretary to write to Mr. Myers on the matter.

An address on the contrast between the present and the past practice of veterinary medicine and surgery, was next given by Principal W. WILLIAMS, New Veterinary College, Edinburgh. (This address appeared in the last number of this journal.)

Mr. COOKE and Mr. CARTER (Bradford) initiated a discussion, the former gentleman recounting some of the singular things which had come under his own observation. Speaking of his experience in Ireland he observed that he had seen a pail of soot and water administered in a case of colic. He had not only seen one frog administered to cows in case of constipation, but several frogs. He had also known of currant stones being given.

Mr. MASON thanked Professor Williams for giving them such an interesting and amusing address comparing the old method of treating animals with the present system. There was no doubt, he continued, about the great strides of veterinary science. The only time that he saw a hot shovel applied was by an old practitioner in Leeds to a horse belonging to one of the leading medical men in the city. Unfortunately for the veterinary surgeon the owner of the animal appeared on the scene, and he was dismissed as being an empiric.

Mr. ATCHERLEY said that his father used a hot shovel to a horse and the animal got well.

Mr. BRIGGS moved a hearty vote of thanks to Professor Williams for his address, and in doing so spoke of curious cases that he had met with and heard of.

Mr. SNARRY (York) seconded, and the Secretary and the President cordially supported the resolution, which was carried with acclamation.

Subsequently the members spent some time in examining and discussing a specimen shown by Mr. Carter, and the proceedings terminated.

CONTAGIOUS DISEASES ANIMALS ACT, 1894.

SUMMARY OF RETURNS OF OUTBREAKS, for the four weeks ending May 23rd, 1896.

ENGLAND AND WALES.

Pleuro-Pneumonia.	Swine Fever.	Glanders including Farcy.	Rabies.	Anthrax.	——
None	Outbreaks confirmed 536 Swine, Slaughtered, diseased, or exposed to infection 7,450	Outbreaks confirmed 54 Animals reported during the four weeks as attacked 89	Cases in dogs reported 42 Other animals ... 2 Destroyed, as having been exposed to infection 64	Outbreaks reported 24 Animals attacked 50	

SCOTLAND.

None	Outbreaks confirmed 12 Swine, slaughtered, diseased, etc. 312	Outbreaks reported 3 Animals attacked 8	Outbreak reported 1 Animal attacked 1	Outbreaks reported 7 Animals attacked 15	

IRELAND.

SUMMARY OF RETURNS for three weeks ending 9th May, 1896.

None	Outbreaks confirmed 65 Swine, slaughtered as diseased, etc. 453	None	Cases in dogs reported 38 Other animals 24 Animals Destroyed, etc. 47	None	

PROPOSED HORSE-BREEDING INQUIRY.

A DEPUTATION of gentlemen interested in horse-breeding in Ireland waited on the Lord-Lieutenant on May 17th. The deputation comprised Lord Rathdonnell, Lord Longford, and Baron de Robeck. His Excellency said he did not see how they could make arrangements to prevent horses being bred in Ireland except from thorough-bred stallions. It seemed to be assumed that there were only two classes of horses in the country—those bred from hackney stallions and those bred from thoroughbreds—but the figures showed that there was a large number of nondescript animals, and with these it was difficult to deal. He saw no means of arriving at any final conclusions in the matter other than that some inquiry of an authoritative character should be made as to the best method of improving and fostering the breed of horses of all classes in the several districts of Ireland.

LORD BURGHCLERE *V.* MR. HERBERT GARDNER.

SINCE he was relieved from the responsibilities of office as Minister of Agriculture, Lord Burghclere is never tired of denouncing Mr. Long for having carried out the policy in regard to Canadian cattle which he himself established and closely adhered to when he was Mr. Herbert Gardner. During the past week his Lordship has sent to the press a letter which breeders and feeders alike will find very amusing in view of his former declarations on the same subject. The letter in question is in the following terms:—

The impression conveyed to the ordinary mind by the Duke of Richmond's speech at the Royal Agricultural Society must surely be (1) that the existing Diseases of Animals Acts have not been successful; (2) that since the passing of these Acts cattle diseases have been prevalent, which have inflicted an immense amount of injury on agriculturists, decimating their flocks and herds with a plague against which they have no protection whatever; and (3) that the diseases are of a kind which can be entirely prevented by such an alteration of the law as is contemplated by Mr. Long's Bill, viz., perpetual slaughter of all foreign cattle at the port.

With regard to (3) it is surprising to find so high an authority as the Duke of Richmond speaking of cattle diseases in such vague and unscientific terms. The diseases of cattle whose introduction from foreign sources we mainly dread are three in number—rinderpest, foot-and-mouth, and pleuro-pneumonia. Slaughter at the port, far from being a safeguard against rinderpest and foot-and-mouth, as the Duke of Richmond's speech seems to imply, would, on the contrary, owing to their high infectivity, be an almost certain source of their propagation.

The only true safeguard against rinderpest and foot-and-mouth disease is total prohibition of importation from the infected countries—a practice which is now in force under the existing Act. It is evident, therefore, that pleuro-pneumonia is the cattle disease mainly affected by Mr. Long's Bill. But nobody surely can deny that the present Diseases of Animals Act has been amply efficacious with regard to pleuro-pneumonia. From 1870—80 the number of outbreaks in Great Britain ranged from 3,262 to 1,052. In 1891, after the passing of the Pleuro Act, they fell to 192; in 1892 there were 35; in 1893, 9; in 1894, 2; and in 1895 only one outbreak is recorded; and this is the disease against which farmers have no protection, and by which their herds are being decimated.

If, then, as seems clear, the disease which so alarms the Government be pleuro-pneumonia, it is obvious that their Bill, from a hygienic point of view, is, to say the least, superfluous; nor does it seem possible any longer to argue that the dread of a malady so completely under control can deter any sane breeder from applying his energy and his capital to the production of cattle. It would rather appear that there never was a time in our history when he could do so with greater confidence or with greater security.

On the other hand, by permanently excluding all foreign store cattle, the Bill bestows a fixed monopoly of that trade upon the breeders of Great Britain and Ireland, an act which is at once unjust to the feeders of the United Kingdom and an irritating cause of offence to our weaker Free Trade brethren. The feeders of this country may be an insignificant minority, the Free Traders may be the too strenuous devotees of a shibboleth; but I would ask the Government whether it is wise to injure the interests or arouse the just fears of any section of the community for the sake of a Bill which, as far as its ostensible objects go, is manifestly uncalled for and wholly unnecessary?—*N. B. Agriculturist.*

AN ANÆSTHETIC INHALER FOR SMALL ANIMALS.
(PATENTED.)

BELOW is description of an apparatus for the administration of anæsthetic and other volatile vapours to small animals, which was introduced by Professor Hobday to the Central Veterinary Medical Association at their meeting in February last.

The method of application is to secure the animal firmly in such a way that respiration is not in any way interfered with, apply the mask to the face and let an assistant work the bellows. The supply of air admitted at the open end of the mask must be regulated by the hand, at the discretion of the anæsthetist. The apparatus has had thorough trial in the free clinique of the London Veterinary College, anæsthesia having been produced in 100 dogs for times varying from a few minutes to over three hours: these animals were not, except in three cases, in any way prepared, and were in all kinds of condition; the operations including such severe tests as amputation of limbs, ovariotomy, reduction of hernia, etc. Only one mishap occurred, and that was after the animal had been anæsthetised safely for thirty minutes, and was due entirely to over confidence and carelessness.

The chief advantages claimed for the apparatus are, first, its safety from the chance of administering an overdose, as with four drachms in the bottle only about one-fifth of a minim of chloroform vapour, well mixed with air, can be forced into the mask at each pressure of the bellows, whilst with one drachm in the bottle this becomes reduced to one-twelfth of a minim: this can be still further reduced by means of the tap, and by pressing the bellows slowly; secondly, that by only allowing the vapour to come in contact with the animal's nose there is no rubefacient or irritant effect produced; and, thirdly, that recovery afterwards is rapid and not attended with any great amount of nausea or depression.

The saving of chloroform is too obvious to need comment. For a small dog it takes from three to six minutes to produce complete anæsthesia, and in a large one from five to ten minutes. It has also been tried on the pig, sheep, and calf, but for the last two animals the mask requires modification in shape so as not to press on the wings of the nostrils.

The Patentees and Manufacturers are Messrs. Arnold & Sons, of West Smithfield, London. Price complete, 25s. 6d.

Army Veterinary Department.

Arrivals.—The undermentioned veterinary officers have arrived in England from India:—

Veterinary-Major W. Walker, in relief.

Veterinary-Major J. W. Evans and Veterinary-Lieutenant W. N. Wright, on sick leave of absence.

Veterinary-Lieutenant H. B. Knight, on private leave of absence.

Departure.—Veterinary-Major G. D. Whitfield embarked at Southampton on 2nd inst. for service with troops in Matabeleland.

Moves.—Veterinary-Lieutenant J. D. E. Holmes was transferred from Woolwich to Newcastle-on-Tyne, for duty at that station, on 1st inst.

Veterinary-Lieutenant W. B. Edwards, transferred from Woolwich to Cahir, for duty with 14th Hussars, on 4th inst.

Mr. Frederick Moody, M.R.C.V.S. (Lond.), Veterinary-Surgeon, the Royal East Kent Yeomanry Cavalry, was called to the Bar, at Lincoln's Inn, on Wednesday, April 29th.

Bombay Castle, 27th April, 1896.

Resolution of Government.

His Excellency the Governor in Council is pleased to appoint Veterinary-Major J. Mills to be a member of the Municipal Corporation of Bombay, *vice* Major B. Scott, C.I.E., R.E., A.I.C.E., resigned.

Veterinary-Major J. Mills, J.P.

(Signed) J. De C. Atkins, *Secretary to Government.*

Parliamentary Intelligence.

Tuberculosis.

Mr. T. W. Russell, in reply to Mr. Field and Dr. Farquharson, said he could not hold out any expectation that a measure would be brought in this year with regard to tuberculosis. But his right hon. friend the President of the Local Government Board hoped to be able to give the names of the members of the Royal Commission on the subject and the order of reference shortly after Whitsuntide.

Notes and News.

Rinderpest in South Africa.—The foreign secretary of the London Missionary Society writes to the *Times* of 28th May, that full and detailed intelligence of the alarming spread and disastrous results that have occurred from the existence of this fatal epizootic in several territories in South Africa, has been received from the missionaries in Bechuanaland. They report that the rinderpest, or cattle disease, is sweeping through the country, and appears to baffle every effort to hinder its progress. It has attacked not only the cattle, but the sheep and goats, and it is said that vast numbers of the game have also died from its effects. As the whole of the wealth of the people is in cattle, they are now deprived of the means of purchasing corn for their needs from more favoured parts of the country, and as the transport of goods has hitherto been carried on almost entirely by ox-waggons, not only is the means of purchasing food gone, but the means of conveying it appears to be gone also. As it must be some months before another harvest can be reaped, even if the next season proves to be a good one, the condition of thousands of people will speedily be very critical. Many Europeans are suffering as severely as the natives. Many transport riders, whose whole capital is in their waggons and oxen, have been forced to leave their waggons on the road and to get back to the nearest town on foot, their cattle having died or having been shot by Government orders in consequence of signs of sickness. Traders with the interior, and a considerable number of other whites, whose meaus are small at the best, will be ruined by this widespread and most serious calamity. The cattle disease has now come south to British Bechuanaland, notwithstanding all the efforts to prevent it, and we may shortly expect to hear that numbers of farmers have been ruined by the scourge. In the case of such Europeans, it may be hoped that the Government may find means of relief, but the natives of Bechuanaland naturally look to the missionary society, which has been at work amongst them for many years past, to help them in their distress.

The Canadian Cattle Trade.—Sir Charles Tupper, replying to a Dundee correspondent respecting the Diseases of Animals Bill, writes :—"I regret to say that we have exhausted all efforts in our power in vain endeavours to prevent Her Majesty's Government closing the door permanently against the admission of Canadian cattle, and I fear, therefore, that it is not possible for

us to do anything further in that direction. You know thoroughly my views on the subject, and how strongly I feel the injustice of using the untenable charge that pleuro-pneumonia exists in Canada to promote such a measure."

Correspondence.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—Since the report of my first interview with the President of the Board of Agriculture was published I have, through the courtesy of that minister, had further opportunities given me of urging upon him the wishes of the profession with regard to its non-recognition by the State, and it now affords me the greatest pleasure and satisfaction to make known to the profession that, as a result of my repeated interviews, the President of the Board of Agriculture has consented to the restoration of the "Veterinary Department with a veterinary surgeon at its head as chief veterinary officer." In offering my congratulations to the profession, I desire to say that, in the present President of the Board, we have a true supporter; and I can only join with him in expressing the hope that, with the obtainment of our wishes, the friction which has so long existed may now cease.—I am, yours faithfully,

JAMES F. SIMPSON, *President.*

(Copy)

(Extract of Letter, dated May 19th, 1896.)

From SAM. LOCKE, F.R.C.V.S., Manchester, to Principal WILLIAMS, Edinburgh.

The Market Committee of the Manchester Corporation have appointed *two more* veterinary surgeons as assistant meat-inspectors. Had it not been for my strenuous efforts some two or three years ago, we would still have had butchers in that important position. A little more active work such as this, and that brought about by our President, Mr. Simpson, as to the Board of Agriculture, will do a great deal more good to the profession at large than all the blatant talk in the Council Chamber and the press, in regard to the education of the student, etc., etc.

I remain, etc.,

SAM. LOCKE.

Obituary.

George Rees, Staines	January, 1880
Clement Lowe, Dockhead (Fellow, February, 1877)..	December, 1855
William Cumming, Alnwick	April, 1863
John Hadden, Biggar, N.B., ...	April, 1877
J. M. Axe, Doncaster	April, 1859
W. E. Dain, Burslem	January, 1886

NOTICE TO CORRESPONDENTS.

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Communications, Books, Journals, etc., Received.

Recueil de Médecine Vétérinaire (Alfort); La Presse Vétérinaire (Paris); Le Bulletin Vétérinaire (Orleans); L'Echo Vétérinaire (Liége); Annales de Médecine Vétérinaire (Brussels); Berliner Thierärztliche Wochenschrift (Berlin): La Clinica Veterinaria (Milan); Il Nuovo Ercolani (Pisa); La Revista Veterinaria (Buenos Aires), etc., etc.

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